

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**EXPENDITURE PATTERNS
OF INDONESIAN HOUSEHOLDS
Before and After the 1997 Economic Crisis**

A thesis submitted in partial fulfilment of the requirements for
Master of Philosophy
in
Agribusiness

at Massey University, Palmerston North,
New Zealand.

Yulistiana Endah Utami

2006

ABSTRACT

Indonesia is a developing country located in the Southeast Asian region and the fourth largest country in the world. Indonesia had a positive economic development, notably since the mid-1960s and this continued until the economic crisis in 1997. Development in the economic sector brings development in the social sector. Household expenditure is one of the social indicators used in a range of studies, particularly in the developing countries, as a common measure to assess living standards and poverty. Theories of consumption illustrate that when the economy surges, expenditure and income rise; and when the economy retrenches, expenditure and income fall. Therefore, changes in Indonesian economic development would be reflected in changes in the expenditure of Indonesian households. Furthermore, patterns of household expenditure can be used to symbolise the level of economic welfare of households, particularly in their buying capacity to meet their needs for living.

In mid-1997, an economic crisis hit Indonesia and this negatively affected the country. Some of the major economic and social indicators showed that the rupiah (the Indonesian currency) fluctuated, the consumer price index climbed, poverty increased, unemployment rose and the price of rice (Indonesia's staple food) increased. By 1999, nearly two years after the 1997 crisis, the Indonesian economy began to demonstrate some signs of recovery, which was indicated by strengthened macroeconomic indicators. From 1999 onwards, GDP grew positively, inflation (CPI) went down, the exchange rate strengthened and food prices went down.

Given the fact that Indonesia experienced an economic crisis in 1997, the general aim of this study was to investigate the impact of the 1997 Indonesian economic crisis on the economic welfare of households in Indonesia, with regard to their expenditure. There were three years (1996, 1999 and 2002) observed to represent the period before the economic crisis in 1997 (before 1997), the period initial adjustment of post crisis (1998-2000) and the period further adjustment of post crisis (after 2001).

Five objectives were set out for the study as follows:

- To examine changes in the Indonesian economy before and after the economic crisis in 1997.
- To review the socio-demographic characteristics of Indonesian households.
- To investigate changes in expenditure patterns of Indonesian households, in order to measure their buying capacity before and after the economic crisis in 1997.
- To investigate changes in household expenditure patterns on different foods and non-food items, before and after the 1997 economic crisis in Indonesia.
- To develop a typology of Indonesian households based on their expenditures.

The data employed for analysis was from the SUSENAS (the national socio-economic survey) at household level conducted by the Indonesian Central Agency for Statistics (CBS). Univariate, bivariate and multivariate analytical methods were performed for the data analysis.

The results showed that the economic crisis in 1997 led to the decline of the purchasing power of households in Indonesia. In the further adjustment of the post crisis (in 2002), their buying capacity level had improved, however, it had not reached their higher level before the crisis (in 1996). Food is a *necessity* expenditure compared to non-food. Indonesian households consumed more than 50 percent of their total expenditure on food, relative to non-food, indicating that the majority of Indonesian households are relatively poor. Necessity items included cereals and vegetables for food and housing, goods-services, health and clothing-footwear for non-food. Luxury items included meats, fruits, prepared food-drink for food and education, durable goods, tax-insurance and social activity for non-food. There were six types of Indonesian households identified, based on similarities in their expenditure. They were labelled from the 'very poor' type (T1) to the 'very wealthy' type (T6). These six types of households demonstrated different stages of expenditure patterns, moving from *basic* through to *high non-basic* expenditure. The very poor type represented about 70 percent of households in Indonesia. In conclusion, the Indonesian economic crisis in 1997 had a negative impact on households in Indonesia with regard to their household expenditures.

ACKNOWLEDGEMENT

Praise to Allah Almighty, the most Glorious, Gracious and Merciful who guided me through difficult time so I am able to finish my study and complete my thesis. Many thanks for those who have contributed upon the completion of this thesis and toward my study. Here, I would like to sincerely express my deepest gratitude to them.

First of all, my deepest gratitude goes to my supervisor, Dr. Elena Garnevska, for her patience in guiding me to complete this research. Her discussion, comments and constructive ideas have stimulated my thinking for doing data analysis and writing my thesis. I am also very grateful to Dr. Ganesh Rauniyar, my former supervisor, for helping me starting this research and guiding me during the first period of data analysis. His encouragement has helped me stood up confidently in an international seminar which I presented the preliminary results of my data analysis.

My sincere gratitude extended to Sylvia Hooker from International Student Support Office (ISSO) and Kathy Hamilton (Administrator for Graduate Studies) from College of Science for their help, supports and encouragement that allowed me to have the opportunity of completing my study at Massey University. I would like to say thank you for everyone in NZAID that have provided me with the funding for my study, also many thanks to Dr. Alasdair Noble and Dr. Ganesh Siva for the statistic consultancy. I would like to acknowledge Sue Flynn (ISSO), Yvonne Parker (Institute Secretary of IFNNH), Wendy Browne (Institute secretary of IIST), Denise Stewart (Institute secretary of NR) and Matt Levin (IFNHH IT-support), who were always helpful in giving assistances every time I needed.

Thank you to my colleagues in the Indonesian Ministry of Agriculture in Jakarta for always being there and listening for me. To my family: especially my parents Sumarso and Kadarwanti, my sisters Frida and Maylanie, and also my brother Agus who could not be with us anymore; please accept my greatest thanks and deepest gratitude for the prayers, love and supports all this time. Last but not least, to all my 'best' friends in Palmerston North, thank you for all your supports, love and friendships. All of you have made my life 'colourful' in New Zealand. Thank you ALL once again!

TABLE OF CONTENT

List of tables	ix
List of figures	x
List of appendices	x
List of abbreviations	xi

Chapter 1

INTRODUCTION	1
1.1 Introduction	1
1.2 Background and problem statement	2
1.3 General aim and objectives of the study	3
1.4 Overall methodology of the study	4
1.5 Importance of the study	5
1.6 Outline of the thesis	6

Chapter 2

AN OVERVIEW OF INDONESIA	7
2.1 General background	7
2.1.1 Location and size	7
2.1.2 Land use	9
2.1.3 Demographic structure	9
2.1.3.1 Population	9
2.1.3.2 Age	10
2.1.3.3 Gender	10
2.1.3.4 Total number and size of household	11
2.1.3.5 Urban and rural areas	11
2.2 Political environment	13
2.3 Economic environment	13
2.3.1 Economic indicators	13
2.3.1.1 Period before the 1997 economic crisis	14
2.3.1.2 Period after the 1997 economic crisis	14
2.3.2 Social indicators	15

2.3.2.1	Wage	16
2.3.2.2	Employment	17
2.4	Summary	19

Chapter 3

LITERATURE REVIEW	21
3.1 Definition of welfare	21
3.2 Approaches for measuring welfare	23
3.2.1 Economic approach	24
3.2.1.1 Expenditure-based approach	24
3.2.1.2 Income-based approach	27
3.2.1.3 Expenditure-based versus income-based approach	29
3.2.2 Non-Economic approach	32
3.3 Determinants of household expenditure	34
3.3.1 Income	34
3.3.2 Size of household	35
3.3.3 Area of living	35
3.3.4 Characteristics of household head	36
3.3.4.1 Age	37
3.3.4.2 Gender	37
3.3.4.3 Marital status	38
3.3.4.4 Education	38
3.4 Related studies of household expenditure	39
3.4.1 Patterns of household expenditure	39
3.4.2 Expenditure patterns on food and non-food items	41
3.5 Summary	43

Chapter 4

METHODOLOGY	46
4.1 Research process	46
4.1.1 Problem identification	47
4.1.2 Literature review	48
4.1.3 Aim and objectives of the research	49
4.1.4 Data collection	49

4.1.4.1	Secondary analysis	50
4.1.4.2	Quantitative versus qualitative type of study	53
4.1.4.3	Longitudinal and time-series of study	55
4.1.4.4	Selection of data set	55
4.1.4.5	The SUSENAS	57
4.1.4.6	Issues of reliability and validity	66
4.2	Data analysis	67
4.2.1	Data management	67
4.2.2	Analytical technique	68
4.2.2.1	Univariate analysis	69
4.2.2.2	Bivariate analysis	70
4.2.2.3	Multivariate analysis	73
4.3	Challenges and limitations of the study	76
4.4	Summary	77

Chapter 5

RESULTS AND ANALYSIS	79
5.1 Profile of the Indonesian households	81
5.1.1 Main socio-economic and demographic characteristics	81
5.1.1.1 Household income	81
5.1.1.2 Size of household	83
5.1.1.3 Area of living	84
5.1.2 Characteristics of the household heads in Indonesia	86
5.2 Patterns of total household expenditure	90
5.3 Expenditure on food and non-food items	92
5.3.1 Food items	92
5.3.2 Non-food items	96
5.4 Types of household in Indonesia	98
5.5 Summary	111

Chapter 6

DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS	113
6.1 Discussion on the major findings	113
6.1.1 Main characteristics of households in Indonesia	113

6.1.2	Patterns of household expenditure in Indonesia	115
6.1.2.1	Total household expenditure	115
6.1.2.2	Expenditure on food and non-food items	117
6.1.3	Typology of Indonesian households	118
6.2	Recommendations for future research	120
6.3	General conclusions of the study	122
REFERENCES		124
APPENDICES		137

LIST OF TABLES

Table 2.1	Distribution of age groups in Indonesia, 1990-2003	10
Table 2.2	Total number and average size of household in Indonesia, 1980-2000	11
Table 2.3	Structure of output in the Indonesian economy, 1990-2003	12
Table 2.4	GDP and inflation rate in Indonesia, 1991-1998	14
Table 2.5	GDP and inflation rate, 1996-2002	15
Table 2.6	Nominal wage and change of nominal wage per month, plus inflation rate, 1990-2003	17
Table 2.7	Labour force in Indonesia, 1990-2003	18
Table 3.1	Urban population in the world	36
Table 5.1	Average monthly income of households in Indonesia	81
Table 5.2	Average size of households in Indonesia	83
Table 5.3	Distribution of living areas within households in Indonesia	85
Table 5.4	Average age of household heads in Indonesia	87
Table 5.5	Distribution of gender of household heads in Indonesia	87
Table 5.6	Distribution of marital status of household heads in Indonesia	88
Table 5.7	Distribution of education of household heads in Indonesia	89
Table 5.8	Average household expenditure per month in Indonesia	90
Table 5.9	Average household expenditure per month on food items in Indonesia	93
Table 5.10	Average household expenditure per month on non-food items in Indonesia	96
Table 5.11	Average household expenditure on food and non-food per month by household types in Indonesia, 1996-2002	100
Table 5.12	Average household expenditure on food items per month by household types in Indonesia, 1996-2002	102
Table 5.13	Average household expenditure on non food items per month by household types in Indonesia, 1996-2002	103
Table 5.14	Socio-demographic characteristics of household types in Indonesia, 1996-2002	104

LIST OF FIGURES

Figure 1.	Map of South East Asia including Indonesia	8
-----------	--	---

LIST OF APPENDICES

Appendix 1	The results of the Chi-Square tests for the characteristics of Indonesian households	138
Appendix 2	The results of ANOVA with post-hoc tests for the characteristics of Indonesian households	139
Appendix 3	The results of ANOVA with post-hoc tests for the average household expenditure in Indonesia	140
Appendix 4	The results of ANOVA with post-hoc tests for the expenditure on food items of Indonesian households	141
Appendix 5	The results of ANOVA with post-hoc tests for the expenditure on non-food items of Indonesian households	142
Appendix 6	Developing typology of Indonesian households	143
Appendix 7	Average household expenditure per month by household types in Indonesia during 1996-2002	146
Appendix 8	Average household expenditure on food items per month by household types in Indonesia during 1996-2002	147
Appendix 9	Average household expenditure on non-food items per month by household types in Indonesia during 1996-2002	148
Appendix 10	Socio-demographic characteristics of the household types in Indonesia during 1996-2002	150

LIST OF ABBREVIATIONS

ADB	:	Asian Development Bank.
CBS	:	Central Bureau of Statistics of Indonesia.
CPI	:	Consumer Price Index.
FHI	:	Family Health International.
GDP	:	Gross Domestic Product
LOC	:	Library of Congress of the USA.
SAKERNAS	:	Survei Angkatan Kerja Nasional (the National Labour Force Survey).
SP	:	Sensus Penduduk (Population Census).
SUPAS	:	Survei Penduduk Antar Sensus (the Intra-Census Population Survey).
SUSENAS	:	National Socio-Economic Survey of Indonesia.
UN	:	United Nations.
WB	:	The World Bank.

Chapter 1

INTRODUCTION

1.1 Introduction

Indonesia is a developing country located in the Southeast Asian region. It is the fourth largest country in the world after China, India and the USA. In the year 2000, the population was 206 million. Indonesia has succeeded in developing its economy, notably since the mid-1960s and this continued up to the economic crisis in 1997. During this period, GDP grew at an average rate of 6.5 percent per year (1997; Schwarz, 1999; Hill, 2000).

Development in the economic sector brings development in the social sector. Economic indicators have no importance without improvement in social indicators (Hill, 2000). Some indicators of social development include the structures of demography, transportation, communication, marketing (Rae, 1999), household expenditure (Widjajanti & Li, 1996; Rae, 1999; Liu & Chern, 2001; Zhang, 2002; Agbola, 2003), poverty, the development gap, the level of nutrients, the level of wages, education and health (Hill, 2000), employment (Asra, 2000) and agricultural productivity (Hendriks & Lyne, 2003).

Among the social indicators mentioned above, household expenditure is used in a range of studies, especially in the developing countries, as a common measure to assess living standards and poverty (Deaton & Grosh, 2000). Examples of these studies are: Hazell and Roell (1983) in Malaysia and Nigeria; Fritsch (1996) in Ethiopia; Widjajanti and Li (1996) in Indonesia; Delgado, *et al.* (1998) in Senegal and Sudan; Webb & Lapping (2002) in Egypt and Ghana; Ishida, *et al.* (2003) in Malaysia; and Wong and Wong (2004) in Hong Kong. Household expenditure was used in Indonesia by Beegle, *et al.* (1999) to investigate the impact of economic crisis upon households, with regard to their economic welfare and by McKenzie (2001) in Mexico.

The relationship between economic development and household expenditure can be viewed from theories of consumption. These theories illustrate that expenditure and income move together over the business cycle. When the economy surges, expenditure and income rise; and when the economy goes down, expenditure and income fall (Mankiw, 2003). Therefore, it could be expected that changes in Indonesian economic development would be reflected in changes in the expenditure of Indonesian households.

Patterns of household expenditure can be used to symbolise the level of economic welfare of households (Erdogan, 1997; Deaton & Grosh, 2000; Sassani, 2004). Household expenditure represents the amount and types of items that are purchased by households (Sassani, 2004). The expenditure value describes the economic capability of households to buy expenditure items (Erdogan, 1997), whilst the expenditure items reflect dimensions of living standards within households (Deaton & Grosh, 2000). Therefore, patterns of household expenditure can describe the economic resources of households including the purchasing power of households to meet their needs for living.

1.2 Background and problem statement

For the last three decades, Indonesia has succeeded in developing its economy. From the mid-1960s, up to the economic crisis in 1997, the country grew at an average rate of 6.5 percent per year (Booth, 1997; Schwarz, 1999; Hill, 2000). During this successful economic development, some yardsticks of social development can be noted including: poverty alleviation for Indonesians that dropped from around 60 percent in 1970 to 15 percent in 1990; the country's movement from the world's largest rice importer to becoming self-sufficient in rice (the major staple food for Indonesians) within a decade (1974-1984); and the improvement of infrastructures such as electricity, telephone lines, paved roads, schools and health centres, from 1975-1990 (Schwarz, 1999). The improvement of income in terms of trade, the soaring world prices of oil (1973-1981), the growing investment and a series of policy reforms all contributed to this high level of growth within the economy (Booth, 1997; Schwarz, 1999; Hill, 2000).

In mid-1997, an economic crisis attacked Indonesia and this negatively affected the country. The rupiah (the Indonesian currency) fluctuated from 2,400 rupiah at the end of

1997 to about 15,000 rupiah per US\$ in January 1998, and then it stabilised, between 8,000 and 10,000, by the end of 1998 (ADB, 1998a; Beegle, *et al.*, 1999) (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006). The consumer price index climbed from 11.6 percent in December 1997 to 58.5 percent in 1998 (ADB, 2000). Poverty increased from 25 percent during 1980-1990 to 39 percent by the end of June 1998 (ADB, 1998a; 2001a). Unemployment rose by 5.5 percent in 1998, relative to 1997 (ADB, 2001b). In addition, the price of rice rose higher than it was before the crisis, which was partly due to the *El-Nino* long drought during the same periods (Wasito, *et al.*, 2001).

By 1999, nearly two years after the 1997 crisis, the Indonesian economy began to demonstrate some signs of recovery which was indicated by strengthened macroeconomic indicators (ADB, 2000; Soekirman, 2001). From 1999 onwards, the GDP grew positively, inflation (CPI) went down, the exchange rate strengthened and food prices were back to those levels before the crisis figures. GDP became positive 0.8 percent in 1999, after a negative 13.1 percent a year earlier (ADB, 2000). GDP continued to grow steadily and reached 4.1 percent in 2003 (ADB, 2004a). Inflation rates plummeted negatively in 1999, but then returned positively from 2000 onwards. In 1999, the rupiah stabilised around 6,800 – 9,500 rupiah per US dollar, which was stronger than it was at the crisis level (ADB, 2000).

Economic development brings social development. One indicator of social development is household expenditure (Hill, 2000). Given the fact that Indonesia experienced an economic crisis in 1997, this study focuses on investigating the impact of the 1997 economic crisis on the economic welfare of households in Indonesia, in terms of their expenditure.

1.3 General aim and objectives of the study

Various studies have been conducted to analyse household expenditure in Indonesia (Chernichovsky & Meesok, 1984; Hakim, 1994; Rae, 1996; Widjajanti & Li, 1996; Suryahadi & Sumarto, 1999; Wasito, *et al.*, 2001; Hutasuht, *et al.*, 2002; Sassani, 2004). However, only few of them have studied changes in expenditure patterns of

Indonesian households, notably before and after the economic crisis in 1997. As a result, little information exists on this particular subject.

The general aim of this study is to assess the impact of the 1997 Indonesian economic crisis on the economic welfare of households in Indonesia, with regard to their expenditures before and after the economic downturn. This study specifically investigates changes in the patterns of household expenditure over the three years observed: 1996, 1999 and 2002.

In order to accomplish the general aim of the study above, five objectives for the study were set out as follows:

- To examine changes in the Indonesian economy before and after the economic crisis in 1997.
- To review the socio-demographic characteristics of Indonesian households.
- To investigate changes in expenditure patterns of Indonesian households, in order to measure their buying capacity before and after the economic crisis in 1997.
- To investigate changes in household expenditure patterns on different foods and non-food items before and after the 1997 economic crisis in Indonesia.
- To develop a typology of Indonesian households based on their expenditures.

1.4 Overall methodology of the study

This study used secondary data sets of existing statistics for data analysis, due to limitations of resources, such as time and money. The household data from the SUSENAS (the National Socio-Economic Survey) conducted by the National Agency for Statistics (CBS) in Indonesia, were chosen for the study. The SUSENAS is a national survey that collects information about various welfare aspects at household level in Indonesia. There were three data sets (1996, 1999 and 2002) that were employed in the study, to cover the period before and after the 1997 Indonesian economic crisis. The 1996 data set represented the period before the crisis (before 1997), the 1999 data set represented the period post-crisis – initial adjustment (1998-2000) and the 2002 data set represented the period post-crisis – further adjustment (after 2001).

The methodology of this study was quantitative. Interpretation of the study was drawn, mainly based on numerical figures. The three data sets from the 1996, 1999 and 2002 SUSENAS categorised the study into a longitudinal and time-series study. The data was managed and analysed using computer-based processing and statistical methods.

Three major analytical techniques of univariate, bivariate and multivariate were performed in the statistical analysis. Univariate analysis is a descriptive analysis and it was used in this study to summarise and build a description of data. Two bivariate analyses (the Chi-square test and the one-way analysis of variance between group test) were conducted to examine the relationships between two variables (independent and dependent variables). A cluster analysis of multivariate was employed to develop a typology of Indonesian households. The SPSS V. 12.0.1 and the SAS[®] system V. 8.2. were used in the statistical analysis.

1.5 Importance of the study

The results of the study contribute to an understanding of what was the impact of the 1997 economic crisis on households in Indonesia. This study investigated the impact of the 1997 economic crisis, particularly, on the economic welfare of households, with regard to their expenditure, before and after the crisis. Based on expenditure patterns, the study would supplement information within the level of economic welfare, particularly the purchasing power of Indonesian households, from the period before and after the economic crisis in 1997. The information also includes whether the level of the buying capacity, of households after the economic crisis (in 2002) had reached their level before the crisis (in 1996). The results of this study would also enrich information, regarding expenditure patterns of households in Indonesia that currently exists.

The typology of households, developed in the study would help identify household types in Indonesia, based on their expenditure. Identification of household types with similar characteristics would hopefully be useful to assist national and international policy makers and users, both public and private, in designing programmes and aids to better target recipients.

1.6 Outline of the thesis

This thesis is written in six chapters. This Chapter is the introduction and it covers the general background of the study, the research problem, the aim and objectives of the study, the overall methodology and the importance of the study. Background information about various aspects of Indonesia (general information, politics, economics and social) is provided in Chapter two. Chapter three reviews literature on theories and existing studies, regarding household expenditure. The methodological steps of this research are discussed in Chapter four. The results of data analysis are presented in Chapter five. Finally, Chapter six discusses the results of the study, draws some conclusions and provides recommendations for future research.

Chapter 2

AN OVERVIEW OF INDONESIA

The aim of this chapter is to provide background information about Indonesia from various aspects (general, political, economic and social). This information provides knowledge of the environment and it is used in order to understand changes in the expenditure patterns of Indonesian households, over the period before and after the economic crisis in 1997.

The chapter is divided into four sections. The first section consists of general background information. The first part of the first section introduces some basic information about Indonesia, whilst the second part of the first section describes the political environment in Indonesia. The economic environment of Indonesia is presented in the third section. The performances of some major macroeconomic indicators of Indonesia, over the period before and after the 1997 economic crisis, are discussed in the subsection on economic indicators, whilst employment and income are covered in the subsection on social indicators. The fourth section provides a summary.

2.1 General background

2.1.1 Location and size

Indonesia is a country located in the Southeast Asian region. It lies between the Pacific Ocean and the Indian Ocean and is situated between the Asian and Australian continents. The countries bordering Indonesia are Malaysia in the north, Papua New Guinea in the east and Timor Leste in the southeast. Figure 1. provides the map of South East Asia including Indonesia.

Figure 1. Map of South East Asia including Indonesia



Base B02B98AI (C00429) 11-02

Source: <http://www.lib.utexas.edu/maps/indonesia.html>

Indonesia is the largest archipelago in the world (CIA, 2005). It has more than 13,667 islands of which only 6,000 are inhabited (LOC, 1992). The total area of Indonesia is around 9.8 million sq. kilometres of which 81 percent, or about 7.9 million sq. kilometres, is sea and the remainder is a land area of about 1.9 million sq. kilometres (CBS, 2001). Indonesia covers 5,120 kilometres from east to west and 1,760 kilometres from north to south (LOC, 1992).

There are five major groups of islands in Indonesia. From the largest to the smallest groups, they are Kalimantan, Sumatera, Papua, Sulawesi and Java. Apart from these five major groups of islands, there are other groups of islands, namely Maluku, Bali, Nusa Tenggara and the remaining 30 groups of islands which are smaller in size (CBS, 2001).

These groups of islands generally consist of coastal lowlands, with the larger groups of islands having mountainous interiors (CIA, 2005). Crossed by the equator line, Indonesia is a tropical country with a fairly even climate all year round (CCOP-EPF, 2002). In 2000, records show that the temperature ranged from 29.8°C to 36.9°C during the day and from 12.6°C to 24.2°C at night (CBS, 2001).

2.1.2 Land use

Agriculture is the sector that uses most land in Indonesia. In 2000, from a total land area of 64.1 million hectare, around 73 percent (excluding the islands of Maluku and Papua) was used for agricultural purposes, whilst the remaining percent was used for other purposes (CBS, 2001). Therefore, from a land use point of view, Indonesia could be categorised as an agricultural-based country.

2.1.3 Demographic structure

2.1.3.1 Population

In 2000, Indonesia recorded a total population of about 206 million, based on the national population census conducted every ten years (CBS, 2001). The population of Indonesia is the fourth largest in the world, after China, India and the USA. According to the national population census, the average annual growth of the Indonesian

population was 1.97 percent during 1980-1990 and it declined to 1.49 percent during 1990-2000 (CBS, 2001).

2.1.3.2 Age

Indonesian documents demonstrate decreasing percentages for the children group and increasing percentages for the adult and elderly groups, based on the national population census (ADB, 1998b; 2004b). The range of age for the children group is 0-14 years, the adult group is 15-64 years and the elderly group is 65⁺ years.

The children group decreased from 36 percent in 1990 to 30.8 percent in 2000 and to 30.0 percent in 2003, whilst the adult group rose from 60 percent in 1990 to 64.5 percent in 2000 and to 65.0 percent in 2003. The elderly group increased from 4 percent in 1990 to 4.7 percent in 2000 and to 5.0 percent in 2003 (Table 2.1).

Table 2.1 Distribution of age groups in Indonesia, 1990-2003.

Age group	1990 (%)	2000 (%)	2003 (%)
0-14	36.0	30.8	30.0
15-64	60.0	64.5	65.0
65 ⁺	4.0	4.7	5.0

Source: ADB (1998b; 2004b).

The trends of distribution by age groups may indicate that the Indonesian population is aging (Pasandaran, 1995). Changes in distribution of age groups could be related to the implementation of the Indonesian national family planning programme (CBS, 2001; FHI, 2005a). This national programme has promoted small families throughout the country. Begun in the 1970s, the programme has resulted in declining fertility rates for Indonesian women, from 5.6 children during 1967-1970 to 2.85 children per family in 1994. Therefore, the number of children per family has been declining in Indonesia.

2.1.3.3 Gender

From 1980 to 2000, Indonesia noted an increased in the number of males over females. Prior to the 2000 national population census, the sex ratio of the Indonesian population was less than 100 (Nam, *et al.*, 1991; CBS, 2001). The Indonesian sex ratio steadily increased from 98.8 in 1980 to 99.4 in 1990 and to 100.6 in 2000 (CBS, 2001). The sex

ratio is the number of males over the number of females times 100. If the sex ratio is over 100, it means the number of males outnumber the number of females.

2.1.3.4 Total number and size of household

The total number of Indonesian households increased from 1980 to 2000 (Table 2.2). The total number of households increased from around 30,372,000 households in 1980 to about 52,008,000 households in 2000. In contrast, during the same period the size of households, or number of people per household, decreased from 4.9 people, on average in 1980, to 3.9 people on average in 2000 (Table 2.2).

Table 2.2 Total number and average size of household in Indonesia, 1980-2000.

Year	Total number of households	Average size of household
	(thousand)	(people)
1980	30,372	4.9
1990	39,546	4.5
2000	52,008	3.9

Source: CBS (2001).

The national family planning programme implemented by the National Family Planning Coordinating Board (BKKBN) contributes to a decline in the size of households (RAND, 1995; CBS, 2001; FHI, 2005a; 2005b; 2005c). Begun in the 1970s, the main aim of the programme is to promote small families as a means to improve family welfare in Indonesia (RAND, 1995). The program has resulted in the fertility rate of Indonesian women declining, from 5.6 children during 1967-1970 to 2.85 children per family in 1994 (FHI, 2005a). The use rate of contraceptives increased from nearly zero, before the 1970s, to 55 percent in 1994 (FHI, 2005b). The programme is viewed as having been widely accepted throughout the country since it has been implemented for more than 30 years (FHI, 2005c). Women with two or three children advocated that they did not want to have more children in their families (FHI, 2005b). Currently, a smaller family size of three or four members is common in Indonesia (FHI, 2005b).

2.1.3.5 Urban and rural areas

Indonesia has faced an increasing trend of urbanisation since the 1970s (LOC, 1992). The proportion of urban people rose from 30.6 percent in 1990 to 40.2 percent in 2000

(CBS, 2001). ADB (2003) estimated that Indonesia reached 45.6 percent of urban population by 2003.

Urbanisation could be viewed as a consequence of changes in the contribution of economic sectors in the Indonesian economy (Firman, 1996). As shown in Table 2.3, from 1990 to 2003, the contribution of the agricultural sector increased between 1990 and 1999 but then it declined up to 2003. On the other hand, the contribution of the industrial sector increased from 1990 to 2000 but then decreased in 2003. The contribution of the services sector declined from 1990 to 2000, but rose in 2003. Overall, the contribution of industrial and services sectors gained over the contribution of the agricultural sector in the Indonesian economy.

Table 2.3 Structure of output in the Indonesian economy, 1990-2003.

Year	Agriculture	Industry	Services
	(%)	(%)	(%)
1990	19.4	39.1	41.5
1994	<i>n.a</i>	<i>n.a</i>	<i>n.a</i>
1995	17.1	41.8	41.1
1996	<i>n.a</i>	<i>n.a</i>	<i>n.a</i>
1997	<i>n.a</i>	<i>n.a</i>	<i>n.a</i>
1998	<i>n.a</i>	<i>n.a</i>	<i>n.a</i>
1999	19.6	43.4	37.0
2000	17.2	46.1	36.7
2001	16.7	45.9	37.4
2002	17.1	44.2	38.7
2003	16.6	43.6	39.9

Source: ADB (2001b; 2004b).

The decreased contribution of the agricultural sector in relation to the country's output of economy may suggest that the agricultural sector has decreased its competitiveness over the industrial and services sectors (Alimi, 2004). As a consequence, rural areas where the agricultural sector is generally located could lose their attractiveness as places for people to live. Another consequence is that people, particularly from rural areas, would be induced and attracted to move to urban areas, where the industrial and services sectors are commonly located. Here there is a demand for more labour (Ishida, *et al.*, 2003) and urban infrastructures are more developed and they are therefore more attractive places in which to live (Warsono, 2005).

2.2 Political environment

Since its independence in 1945 and up to 2001, Indonesia implemented a central and autocratic system of governance. This system of governance has been viewed as producing an uneven development in the country (Hill, 2000). This imbalanced development has raised a range of issues throughout the country concerned with aspects of the social, economic and political environment, such as the rights of land property, labour, migrant workers, natural resources, religions, social classes and ethnicity; regional productivity; financial facilities; legal system; practices of corruption, collusion, nepotism and monopoly; and structural and institutional decision-making process (Baker, *et al.*, 1999; Schwarz, 1999; Friend, 2000; USAID, 2001). When the economic crisis happened in 1997, some of these issues were brought to the surface and led the economic crisis into, not only economic, but also social and political crisis (Djiwandono, 1999; Schwarz, 1999). The economic crisis in 1997 has been viewed as the trigger for the Indonesian government to reform and restructure the economic, social and political environment of the country.

In the political environment, one of the reforms and re-structuring process is the reallocation of authority and functions from central government to regional government (Usman, 2002; WB, 2003). By 1 January 2001, the decentralisation system of governance had taken effect in Indonesia and since then central government has transferred most of its authority and functions to district governments with the provincial government as a coordinator (WB, 2003). The country has commenced a political transformation from autocracy to democracy, since the era of regional autonomy that began in 2001 (USAID, 2001).

2.3 Economic environment

2.3.1 Economic indicators

This subsection aims to describe the economic environment of Indonesia during the period before and after the economic crisis in 1997, based on the performances of some major macroeconomic indicators.

2.3.1.1 Period before the 1997 economic crisis

Before the economic crisis in 1997, Indonesia was noted to have succeeded in developing its economy. For the last three decades, from the mid-1960s up to 1996, the country grew at an average rate of 6.5 percent per year (Booth, 1997; Schwarz, 1999; Hill, 2000). Within this period, rates were higher in the 1990s (Hill, 2000). As shown in Table 2.4, from 1991 to 1996, the growth of GDP was relatively stable and more than 7 percent per year. During this period, all major economic sectors of the economy grew, particularly the agricultural sector. Investments in manufacturing, power generation and infrastructure and the expansion of new areas for cultivation in rice (the staple food) had contributed to this growth in the economic sectors (ADB, 1998a). Due to a tight monetary policy and a conservative budget (ADB, 1998a), the inflation rate declined from 9.2 percent in 1991 to 7.9 percent in 1996. Despite these improvements in economic development, Indonesia has faced an increasing trend of unemployment. The rate of unemployment rose steadily from 2.6 percent in 1991 to 4.9 percent in 1996.

Table 2.4 GDP and inflation rate in Indonesia, 1991-1998.

Item	(%)							
	1991	1992	1993	1994	1995	1996	1997	1998
GDP growth	6.9	7.2	6.5	7.5	8.2	7.8	4.7	-13.1
• Agriculture	1.4	6.3	1.7	0.6	4.4	3.1	1.0	-1.3
• Industry	10.3	8.2	9.8	11.2	10.4	10.7	5.2	-14.0
• Services	6.1	6.8	7.4	7.1	7.6	6.8	5.6	-16.5
Inflation rate	9.2	7.6	9.7	8.5	9.5	7.9	6.6	58.5
Unemployment rate	2.6	2.7	3.0	4.4	n.a	4.9	4.7	5.5

Source: ADB (1994; 1998a; 2000; 2001b; 2002; 2003; 2004b).

2.3.1.2 Period after the 1997 economic crisis

In 1999, nearly two years after the economic crisis in 1997, the performance of the Indonesian economy showed some starting signs of recovery (ADB, 2000; Soekirman, 2001). After the economy fell sharply by -13.2 percent in 1998, the country recorded a positive growth of GDP at 0.2 percent in 1999. All major sectors of the economy demonstrated growth, initiated by the agricultural sector (Table 2.5). This growth was largely due to an improvement in agricultural production, manufacturing, construction and banking and financial services (ADB, 2000).

Table 2.5 GDP and inflation rate, 1996-2002.

Item	(%)							
	1996	1997	1998	1999	2000	2001	2002	2003
GDP growth	7.8	4.7	-13.1	0.8	4.8	3.5	3.7	4.1
• Agriculture	3.1	1.0	-1.3	2.2	1.9	1.7	2.0	2.5
• Industry	10.7	5.2	-14.0	2.0	5.9	3.1	3.5	3.4
• Services	6.8	5.6	-16.5	-1.0	5.2	4.6	4.5	5.5
Inflation rate	7.9	6.6	58.5	20.5	3.7	11.5	11.9	6.6
Unemployment rate	4.9	5.5	5.5	6.4	6.1	8.1	9.1	9.5

Source: ADB (1998a; 2000; 2001b; 2002; 2003; 2004b).

After escalating to 58.5 percent in 1998, the inflation rate dropped to 20.5 percent in 1999. The decrease in the price of rice, the restoration of food distribution channels, the appreciation of the rupiah and a tight monetary policy, implemented by the Indonesian government as part of the recovery programme for the crisis, resulted in a decline of the inflation rate (ADB, 2000). Although the economy of the country has begun to increase, the rate of unemployment continued to increase from 5.5 percent in 1998 to 6.4 percent in 1999 (Table 2.5).

Since 1999, the Indonesian economy has continued to grow following the upward movement started at that time. GDP steadily grew from 0.8 percent in 1999 to 4.1 percent in 2003. The major economic sectors of agriculture and industry and services exhibited stronger growth. The rate of inflation continued to gradually decline from 20.5 percent in 1999 to 6.6 percent in 2003 (Table 2.5). Structural reforms, macroeconomic stability and political changes have strengthened the economy of the country (ADB, 2003). On the other hand, the unemployment rate continued to increase. It was 6.4 percent in 1999 and rose to 9.1 percent in 2002 (Table 2.5). A poor investment climate, the rising numbers in the labour force, particularly when Indonesia faced thousands of illegal workers returning from overseas and the increased annual number of young people who had graduated or left school in search of employment, were some of the reasons for the unemployment situation (ADB, 2003).

2.3.2 Social indicators

Indicators of social development are important in order to measure the progress of economic development (Hill, 2000). Theories of consumption suggest that income is a key determinant factor of consumer behaviour (Mankiw, 2003). Income and

employment are interlinked (Manning, 1994; Suryahadi, *et al.*, 1999; Booth, 2002). These two issues, income and employment, are discussed in the subsection below.

2.3.2.1 Wage

In this literature review, this study used information on wages to illustrate patterns of income, because information on income was limited in Indonesia. Information on wages from the formal sector was more readily available than that from the informal sector. This is presumably because the formal sector (manufacturing) has more regularly recorded data of wages compared to the informal sector (agricultural, trade and small industry) (ADB, 2004a). According to Hill (2000), data of wages from the formal sector does not provide much information for those people engaged in the informal sector, which absorbs about two thirds of Indonesian workers. However, data on wages from the formal wage sector can be used to partially describe the wage situation in Indonesia (Hill, 2000).

Table 2.6 demonstrates that average nominal wages per month, for Indonesian workers, increased between 1990 and 2003. Up to 1997, changes in the average nominal wages, although fluctuating, were still above the rates of inflation. Therefore, real wages increased during the same period. After 1997, the average nominal wages failed to keep up with inflation rates. In 1998, the nominal wage increased by around 20 percent, but the rate of inflation was 58.5 percent and thus real wages decreased. The nominal wage increased above the inflation rates after 1998 and therefore real wages increased.

The increases of average nominal wages could be due to the following reasons:

- Up to the beginning of the economic crisis in 1997, the increase of the nominal wage was possibly due to tight labour markets, the increased number of skilled workers, and the deployment of skilled workers into higher-productivity jobs, particularly in the manufacturing and services sectors (Manning, 2000).
- The increase of the minimum formal wage since the 1990s (ADB, 1998a; 2000; Suryahadi, *et al.*, 2003; ADB, 2004a; CBS, 2005). Since the early 1990s, the formal minimum wage has become an important part of the government's labour policies (ADB, 1998a; Suryahadi, *et al.*, 1999).

Table 2.6 Nominal wage and change of nominal wage per month, plus inflation rate, 1990-2003.

Year	Average wages (rupiah/month)	Change (%)	Inflation rate (%)
1990	88,891	-	<i>n.a</i>
1991	102,408	15.21	9.2
1992	114,131	11.45	7.6
1993	141,943	24.37	9.7
1994	157,883	11.23	8.5
1995	189,463	20.00	9.5
1996	207,325	9.43	7.9
1997	240,960	16.22	6.6
1998	290,505	20.56	58.5
1999	353,939	21.84	20.5
2000	430,197	21.55	3.7
2001	530,993	23.43	11.5
2002	599,769	12.95	11.9
2003	684,915	14.20	6.6

Notes : NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah (1 February 2006).

Source: ADB (1994; 1998a; 2000; 2001b; 2002; 2003; 2004b).

The National Labour Force Survey (SAKERNAS) for 1990-1994 and 1996-2003 and the Inter-census Population Survey for 1995 (CBS, 2005).

Although only about one third of the Indonesian labour force is engaged in the formal sector, the role of the minimum wage in the formal sector has been very important for Indonesian workers. According to ADB (2003), increases to the formal minimum wage have been an important contribution and support to the expenditure of households in Indonesia.

2.3.2.2 Employment

Indonesia faces increasing numbers in its labour force. As seen in Table 2.7, from 1990 to 2003 the number of workers in the Indonesian labour force increased by 30 percent from about 77,000 workers in 1990 to slightly more than 100,000 workers in 2003. The percentage of employed workers has fluctuated but it tended to decrease, from 97.5 percent in 1990 to 90.5 percent in 2003. As a consequence, the percentage of unemployed in the labour force tended to increase. Unemployment rose from 2.5 percent in 1990 to 9.5 percent in 2003.

Table 2.7 Labour force in Indonesia, 1990-2003.

Item	1990	1996	1997	1998	1999	2000	2001	2002	2003
Total labour force(000)	77,803	90,110	91,325	92,735	94,847	95,661	98,812	100,779	100,316
Employed (000)	75,851	85,702	87,050	87,672	88,817	89,838	90,807	1,647	90,785
Employed (%)	97.5	95.1	95.3	94.5	93.6	93.9	91.9	90.9	90.5
• agriculture	55.9	44.0	41.2	45.0	43.2	45.3	43.8	44.3	46.3
• manufacturing	9.9	12.0	12.3	10.7	12.1	12.2	12.2	12.0	10.9
• mining	0.7	0.9	1.0	0.7	0.8	0.5	-	0.6	0.7
• others*	32.5	40.4	41.7	40.6	40.3	38.7	39.4	38.0	37.0
Unemployed (000)	1,952	4,408	4,275	5,063	6,030	5,858	8,005	9,132	9,531
Unemployed (%)	2.5	4.9	4.7	5.5	6.4	6.1	8.1	9.1	9.5

Note : * Other includes construction; wholesale trade; retail trade; restaurants and hotels; transportation, storage, communication; finance, insurance, real estate, and business services; public services; and others.

Source : ADB (2001b; 2004b).

Amongst economic sectors, the agricultural sector employs the largest percentage (around 40-50 percent) of Indonesian workers. Up to the period before the crisis in 1997, the percentage of agricultural workers showed a decreasing trend. It decreased from 55.9 percent in 1990 to 41.2 percent in 1997 (Table 2.7). This was possibly related to a decade of government deregulation (1986-1996), within which the country grew at a higher rate, compared to the years before (Manning, 2000). During government deregulation (1986-1996), the rate of GDP was more than 7 percent per year. Manning (2000) illustrates that, because the manufacturing and construction sectors grew so quickly, the industrial and the services sectors could absorb workers from the agricultural sector. Therefore, the percentage of workers from the manufacturing and construction sectors increased and the percentage of agricultural workers decreased from 1990 up to 1997 (Table 2.7). However, labour absorption within the industrial and services sectors, was slow (Manning, 2000).

After 1997, the agricultural sector demonstrated a gain in its share of the employment sector (Table 2.7). Studying further adjustment on employment after the economic crisis in Indonesia, from August 1997 to 1998, Manning (2000) and Hugo (2000) reported that:

- The agricultural sector played the saviour for employment by absorbing a substantial proportion of displaced workers. Around 30-40 percent of workers who left the manufacturing and services sectors shifted to the agricultural sector (Manning, 2000). Agricultural workers increased by 11 percent or by about an additional 3.6 million in rural areas, whilst their numbers rose by 45 percent or additional 1.0 million in urban areas (Hugo, 2000).

- Most of the additional agricultural workers were self-employed and worked in family businesses (Manning, 2000). They worked in areas such as small farms, dry land, their house-gardens or previously unused land that was abundant on the outskirts of urban areas (Hugo, 2000; Manning, 2000).
- Another 20 percent of workers, who left the manufacturing and services sectors, found jobs in the trade sector and hence, besides the agricultural sector, the trade sector also played an important role in terms of employment. Jobs in the trade sector were most likely involved with small stalls and hawking (carrying or selling foods or goods on the streets) which are typical jobs of trade in the informal sector of urban areas (Manning, 2000).
- The remaining 40-50 percent of displaced workers shared jobs in manufacturing, construction, services and other sectors (Manning, 2000).
- Female employment increased more than male employment. More females went to work, particularly in the agricultural sector in rural areas, in order to supplement the family income (Manning, 2000).

Since 1998 and up to 2003, the percentages of agricultural and non-agricultural workers have demonstrated fluctuations (Table 2.7). With a small growth in the economy after recovery from the financial crisis, the pattern of employment in the economic sectors, as demonstrated in table 2.7, might be expected. From 1999 to 2002, the annual growth rates of GDP and the major sectors of agriculture, industry and services were less than 5 percent which were lower rates than before 1997 (Table 2.5).

2.4 Summary

Indonesia, located in the Southeast Asian region, is a developing country and the fourth largest country in the world. Based on the land use, Indonesia could be categorised as an agricultural-based country. However, the contribution of agricultural sector to the Indonesian economy is decreasing. Currently, slightly more than 50 percent of the population live in rural areas.

Prior to 2001, the country implemented a central and autocratic system of governance. Beginning on 1 January 2001, stimulated by the 1997 economic crisis, Indonesia commenced an era of regional autonomy, in which the central government transferred

most of its authority and functions to district governments with the provincial government as a coordinator.

For more than three decades, the country succeeded in developing its economy. By 1996, the economy recorded a high growth rate of 7.8 percent. An economic crisis occurred in 1997 which negatively affected the economy. The growth rate of the economy contracted by -13.1 percent in 1998. Since 1999, the economy has demonstrated a recovery and by 2002 the growth rate reached 3.7 percent.

The agricultural sector remained a major sector for the economy, with the industrial and services sectors gaining their contribution in the output of the economy. Slightly less than 50 percent of the total employed labour force was engaged in the agricultural sector. The number of workers in the labour force was increasing. However, the percentage of employed workers decreased. Consequently, the rate of unemployment showed a pattern of increase. In addition, during 1990-2003, the pattern of wages also demonstrated an increase.

Background information about Indonesia presented above would be expectedly useful to understand changes in expenditure patterns of Indonesian households investigated in this study, before and after the 1997 economic crisis. Next chapter will review theories and approaches of measurements, which could be used to measure household welfare, and existing studies related to household expenditure.

Chapter 3

LITERATURE REVIEW

This chapter reviews theories and studies that have evolved in the area of welfare. This chapter is arranged into five sections. The first section explains how welfare has been defined in the literature. The second section discusses the two approaches towards welfare measurements that are divided into: economic and non-economic approaches. The third section presents determinants of household expenditure. Previous studies, related to household expenditure are summarised in the fourth section. The key findings of the literature review are provided in the fifth section.

3.1 Definition of welfare

In the Webster dictionary, the term *welfare* has a similar meaning to *well-being*. Well-being means the state of being healthy, happy, comfortable and contented (Webster-Dictionary, 1996).

One of the earliest definitions of welfare was stated by Rowntree (1899, as cited in Saunders, 2004) in the late eighteenth century. Rowntree (1899, as cited in Saunders, 2004, p. 5) described poor people as not having enough earnings “*to obtain minimum necessities of merely physical efficiency*”. This definition was one of the earliest influential definitions of welfare. Here, poverty was viewed and based on material needs. Poverty was determined as a condition of whether or not the people could cover their basic needs or minimum standard of living. Literature defines this condition of poverty as an absolute concept of poverty (CCSD, 2001; Saunders, 2004; Wong & Wong, 2004).

The absolute concept of welfare has dominated studies of welfare for approximately the past eight decades. In 1979, Townsend (1979, as cited in Fisher, 2001; Dignan & McLaughlin, 2002; Oulette, *et al.*, 2004), a prominent British scholar of welfare, introduced a definition of welfare that addresses a more relative aspect of welfare.

Townsend (1979, as cited in Fisher, 2001, p.2) classified people as poor when:

“...they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs, and activities.”

Townsend's relative concept of welfare was supported by two well-known scholars of welfare who were also from Britain, Mack and Lansley (1985, as cited in Fisher, 2001; Dignan & McLaughlin, 2002; Oulette, *et al.*, 2004). They simply defined that “*poverty is an enforced lack of socially perceived necessities*” (as cited in Saunders, 2004, p.5). These two relative concepts of welfare describe the fact that being poor is more related to a lack of adequate levels of living related to, “*the normal standards in society*” (Wong & Wong, 2004, p.5) or to “*being distance from the community norm*” (CCSD, 2001, p.2).

The absolute concept of welfare is argued to be more applicable in the developing countries, than in the developed countries (Noble, *et al.*, 2004; Saunders, 2004). Given the fact that most people in the developing countries live in conditions below the minimum standard of living, implementing the relative term of welfare could produce ‘a too low’ estimation of living levels in those countries (Noble, *et al.*, 2004). Conversely, since the majority of people in the developed countries are living above the minimum standard of living, in order to define and to measure poverty in these countries, material needs will not be the only fact to consider; community perception toward poverty also needs to be taken into account (Saunders, 2004).

To counter the above arguments, Sen, a Nobel winner (1983, as cited in Noble, *et al.*, 2004) suggests that the absolute concept of welfare is still important and thus an adequate concept of welfare should always include absolute components of living, despite the relative ones.

Sen (1985, as cited in Ramos & Silber, 2005, p.286) explains that:

“One could be well-off, without being well (due to health problems). One could be well, without being able to lead the life he or she wanted (due to cultural restrictions and bounds). One could have got the life he or she wanted, without being happy (due to psychological problems). One could be happy, without having much freedom (due to society’s norms). One could have a good deal of freedom, without achieving much (due to lack of self-confidence or self-esteem). We can go on...”

Sen’s concept of welfare gives an understanding that welfare is concerned with both a standard of living and quality of life that is relevant in the society (Said, 2000; Dukeov, *et al.*, 2001; Saunders, 2004; Ramos & Silber, 2005).

Definitions of welfare stimulate the development of approaches for measuring welfare. Approaches for welfare measurement are discussed below.

3.2 Approaches for measuring welfare

Literature has documented considerable numbers of methods to measure the levels of welfare (CCSD, 2001; Dukeov, *et al.*, 2001; Fisher, 2001; Dignan & McLaughlin, 2002; ADB, 2004b). In general, based on the variables used in the measures, the literature divides the methods into two broad approaches.

Deaton and Grosh (2000) name the two approaches: material and non-material. The material (also called economic) approach deals with goods and resources (assets and income), while the non-material (non-economic) approach estimates needs, such as health, education, crime and political liberty. In comparison, Said (2000) and ADB (2004b) calls the two approaches: monetary and non-monetary. The monetary approach has variables of income and expenditure (Said, 2000; ADB, 2004b), while the non-monetary aspect contains variables such as mortality, literacy and health (Said, 2000), and access to aspects such as literacy, nutrition, health, water, sanitation, and political freedom (ADB, 2004b). In addition, ADB (2004b) also applies terms of material and non-material to the two approaches.

The two approaches of economic and non-economic, discussed above, are important measures to assess levels of living. However, the economic approach has been more dominantly employed, compared to the non-economic approach (Kumar, 1985; Weinberg, 1995; Jorgensen, 1998; Deaton & Grosh, 2000; CCSD, 2001; Dukeov, *et al.*, 2001; Dignan & McLaughlin, 2002; Sassani, 2004; Wong & Wong, 2004; ADB, 2004b).

Said (2000) argues that the economic-based approach has two main reasons to be more frequently employed. Firstly, there is a need to know the levels of welfare in terms of quantitative figures. Secondly, the quantitative estimates are important to evaluate government programmes and policies. Deaton and Grosh (2000, p.91) add that the economic-based approach, “*will always play an important role*” in assessing levels of living.

The following sections discuss the approaches for measuring welfare, viewed from the economic and the non-economic approach.

3.2.1 Economic approach

The economic approach that has been mainly developed to determine levels of living, based on material needs, has two main approaches: expenditure-based and income-based.

3.2.1.1 Expenditure-based approach

The main concept of the expenditure-based approach is to use expenditure as a proxy indicator to illustrate the economic capability of households or individuals (Dignan & McLaughlin, 2002). This is because expenditure describes the types and amounts of goods and services that households/individuals can purchase (Dignan & McLaughlin, 2002; Sassani, 2004).

In studies of poverty determination, the expenditure-based approach sets a pre-defined minimum expenditure line. This line then determines whether the expenditure of households/individuals is above or below the pre-defined minimum expenditure line in

order to meet a minimum standard of living (Kumar, 1985; Jorgensen, 1998; Deaton, 2004; Wong & Wong, 2004; ADB, 2004b).

To determine the pre-defined minimum expenditure line, Erdogan (1997; Jorgensen, 1998), Fritsche (1996), McGee and Scott (2000) and Said (2000) suggest calculating the expenditure from a basic needs point of view. Basic needs consist of food and non-food. McGee and Scott (2000) add that another calculation of expenditure can be from a basic material point of view, which deals only with expenditure on food. Therefore, the pre-defined minimum expenditure line could be set, based on the cost of a households/individuals for acquiring an amount of calories, a consumption bundle of foods, or a basket of basic needs (food and non-food) (Kumar, 1985; Erdogan, 1997; Jorgensen, 1998; McGee & Scott, 2000; Wong & Wong, 2004; ADB, 2004b).

In demand analyses, expenditure on food is quite inelastic which indicates that food is a hardship or dominant component, relative to non-food within total expenditure (Fritsche, 1996; Erdogan, 1997; McGee & Scott, 2000; Said, 2000; Wong & Wong, 2004; ADB, 2004b). Expenditure on food is prioritised, relative to non-food, because human beings depend on energy to live and their main source of energy is food (Kumar, 1985). In order to exist, individuals put their efforts first to meet their need for food. Next efforts are to other needs, such as housing, clothing, goods and services (Erdogan, 1997). The demand analyses also show that the population, at different levels of income or status, demonstrates different behaviours regarding food expenditure (Bertail & Caillavet, 2003). Therefore, the demand analyses may suggest that patterns of food expenditure could solely play the part of a proxy to determine levels of living (Akabay & Boz, 2001; Bertail & Caillavet, 2003).

Theoretically, the relationship between food and non-food in the demand analyses is built on the work of Engel's law (Orshansky, 1977). This law is a known theory in food expenditure, introduced by Engel (1895, as cited in Gibson, 2002). Engel observed that income is inversely related to food expenditure. The proportion of expenditure allocated on food would decline, as income increases (Kinsey, 1994; Gibson, 2002; Gan & Vernon, 2003). The inverse relationship between income and food expenditure, in Engel's law could be explained by the fact that consumption on food is limited by the

size of the human stomach (Kinsey, 1994). This law infers that non-food expenditure is an increasing function of income (Haq & Bhatti, 2001).

The expenditure approach has been developed in a number of countries. Some early variants of the expenditure approach were found around 1877 in the US and in 1901 in the UK and they were called the budget standard approach (Fisher, 2001). The budget standard approach prices a basket of goods and services to represent a certain level of standard of living (Fisher, 2001; Dignan & McLaughlin, 2002). Because the budget approach generally addresses the absolute component of welfare, the UK scholars of welfare, who were dominantly social advocates, paid less attention to the development of the budget approach compared to the US scholars. The budget approach has been more developed in the US where the US scholars of welfare are mostly economists (Fisher, 2001). The US scholars of welfare have extended the items of expenditure, included in the budget approach, to focus not only on need but also on the quality, condition and lifestyle of households (Oulette, *et al.*, 2004). These items of expenditure are called material hardships (Beverly, 2001; Oulette, *et al.*, 2004).

In the developing countries, some examples of the work relating to the expenditure-based approach can be found in Bangladesh, Indonesia and India (Said, 2000; Deaton, 2004; ADB, 2004b). In Indonesia, for example, the country employs an expenditure approach to estimate its official minimum poverty line. This is calculated, based on expenditure of food equivalent to the value of 2,100 calories intake per capita per day. Consequently, those households that spend below the value of 2,100 calories intake per capita per day, are considered as poor (Said, 2000).

Another work relating to the expenditure approach is the Low Income Cut Offs (LICOs) in Canada. Canada Statistics releases annually the LICOs as the minimum income line. The LICOs apply a budget for food, clothing and shelter to determine the minimum income line. The LICOs are calculated by adding 20 percent to the percentage of income which the average household spends on food, clothing and shelter. For example, if the average household allocates about 35 percent of their income to food, clothing and shelter then it means that those households, who spend more than 55 percent (35 percent + 20 percent) of their income on these three necessities, are categorized as poor (CCSD, 2001).

3.2.1.2 Income-based approach

Conceptually, the factor of income is used in the income-based approach as a proxy indicator for representing the economic resources of households or individuals (Dignan & McLaughlin, 2002). In studies of poverty, such as the expenditure approach, the income approach calculates a pre-defined minimum income line and it determines whether the income of the household/individual falls above or below the pre-defined minimum income line to attain a minimum standard of living (Kumar, 1985; Jorgensen, 1998; Said, 2000; CCSD, 2001; Dignan & McLaughlin, 2002; ADB, 2004b).

Some of the early important works relating to the income approach were the Leyden Poverty Line (LPL) and the Subjective Poverty Line (SPL), the Centre for Social Policy (CSP) poverty line and the Population Average Method (PAM). These four approaches are variants of the currently-called *subjective poverty line* approach. The LPL and SPL were developed by economists at the University of Leyden in the Netherlands in the mid-1970s. CSP was created by Deleeck and associates at the Centre for Social Policy at the University of Antwerp in Belgium about 1976 and PAM was developed by Townsend and colleagues in Britain beginning in 1985 (Fisher, 2001)

The Leyden poverty line (LPL) was based on responses from a survey using income evaluation questions. The survey asked respondents to relate the amount of their income to a range of evaluative terms ranging from *very bad* to *very good*. The responses were converted into a scale between 0 (not sufficient) and 1 (sufficient). Using certain considerations, the researchers or other users could choose the minimum welfare level depending on their purposes, for example, at 0.5 (halfway between insufficient and sufficient) (Fisher, 1992; 2001).

The Subjective Poverty Line (SPL) and the Centre for Social Policy (CSP) poverty line were determined from the results of a survey using the Minimum Income Questions (MIQ). The MIQ is influenced by a question in a Gallup Poll as follows:

“How much is the smallest amount of money that is required per week to run a family of four (two parents and two children) in a community?” (Fisher, 2001, p.14).

Since the 1940s, this Gallup Poll has been conducted in several English-speaking countries. It was created by the Gallup Poll organizations, led by the American Institute of Public Opinion's Gallup Poll. The question is essentially similar in all these countries. Using different statistical calculations, the SPL and the CSP poverty line for different family sizes were set (Milanovic & Jovanovic, 2000; Fisher, 2001).

An Australian researcher, Halladay (1972, as cited in Fisher, 2001) used the Gallup Poll to develop one of six alternatives to the poverty line in Sydney. He employed the responses in the 1969 Morgan Gallup Poll (MGP). Two other Australian researchers, Saunders and Bradbury (1989, as cited in Fisher, 2001) also used the Gallup Poll to calculate a poverty line for their studies. Using the SPL methodology, they employed the 1987 MGP. In the US, one of the users of the Gallup Poll was Vaughan (1993, as cited in Fisher, 2001) who created a series of Gallup-based poverty lines for a four-person family for the periods 1947-1989.

The Population Average Method (PAM) is home to variants of the *subjective poverty line* developed by Townsend and colleagues (as cited in Fisher, 2001, p.13) which started in the beginning of 1985 and continued up to 1999. Instead of employing the regression procedure of the SPL, the PAM estimated various poverty lines for different household sizes simply by using the averages of the responses. The procedure of setting the poverty lines, using the averages, was described as *simple, arguable and democratic* (Fisher, 2001).

Currently, different countries have employed simple procedures to determine their official minimum income line in order to estimate levels of welfare of people. The pre-defined minimum income line is now commonly calculated by using averages such as mean and median of income (Jorgensen, 1998; CCSD, 2001; Dignan & McLaughlin, 2002). The following are examples of current implementation of the income approach to measure levels of welfare in different countries:

- The US Census Bureau employs approximately half of the median family income to estimate the official minimum income line which is called the 'standard of living'. Hence, those who receive an income below half of the median family income are classified as poor (Jorgensen, 1998).

- Despite LICO, the Statistics Canada also estimates the Low Income Measure (LIM). The LIM is determined at one-half of the median income and hence being poor is for those having an income below the one-half median income (CCSD, 2001).
- The United Kingdom (UK) typically uses 50 percent of mean household income to calculate its official minimum income line. This means that UK households, having incomes below 50 percent of the mean income, are labelled as poor (Dignan & McLaughlin, 2002).
- To set its official minimum income line, the European Union (EU) usually implements 60 percent of the median income of households. EU households, which earn an income below 60 percent of the median income, are categorized as poor. (Dignan & McLaughlin, 2002).
- In addition, the World Bank introduced US\$1 and US\$2 to determine the minimum income line, meaning that those who live on less than US\$1 or US\$2 are defined as poor (CCSD, 2001; ADB, 2004b). These pre-defined minimum income lines of US\$1 and US\$2 have been widely recognized as the most common international approach (ADB, 2004b) and they are applied widely in the developing countries (CCSD, 2001).

Literature notes that some studies either compare or combine both the expenditure and the income approach. The results of the expenditure approach are mainly intended to supplement the results of the income-based approach. Examples of these studies are Jorgensen (1998) in the US; CCSD (2001) in Canada, Saunders (2004) in Australia, Wong and Wong (2004) in Hong Kong and Deeming (2005) in the UK.

The use of expenditure and income-based approaches has been widely debated in the literature, particularly with respect to their advantages and limitations. The debate surrounding these two approaches is discussed below.

3.2.1.3 Expenditure-based versus income-based approach

The expenditure-based approach carries some advantages and disadvantages. Its advantages include the following:

- An approach based on expenditure may produce an unbiased indicator of poverty level, relative to the approach based on income (Slesnick, 1993). Using the 1960 to 1989 US Consumer Expenditure Survey, Slesnick (1993) found that the expenditure approach gave a substantially lower estimation of poverty rates.
- By using saving and borrowing, consumers can plan their expenditure in the longer term and thus expenditure can be more predictable or more stable (Meghir, 2002).
- The expenditure approach describes types and amounts of goods and services that households actually purchase and hence the expenditure approach may represent the actual economic capability of the households (Wong & Wong, 2004).
- The expenditure approach takes into account changes in prices, due to national, cultural, climatic and other factors; therefore patterns of expenditure have acknowledged changes in societies where people live (Wong & Wong, 2004).

Despite these advantages, the expenditure-based approach exhibits some limitations. One of the limitations is the difficulty to determine what items of expenditure should be included in a basket of expenditure, in order to set the pre-defined minimum expenditure line (Kumar, 1985; Weinberg, 1995; Dignan & McLaughlin, 2002; ADB, 2004b). Another limitation of the expenditure approach is that the relationship between expenditure and the economic resources, needed to finance the expenditure, are not easy to explain (Saunders, 2004). For example, a high expenditure in a household may be funded by high debt, rather than saving. Conversely, low expenditure may reflect different tastes rather than lack of resources (Kumar, 1985; Saunders, 2004).

Similar to the expenditure-based approach, the income-based approach has also benefits and constraints.

The main advantage of the income approach is its simplicity. For poverty measurement, it simply states how many people are poor, by estimating the numbers of those who fall below or above the pre-defined minimum income level. The results of the income-based approach are then easily understood (Dignan & McLaughlin, 2002).

On the other hand, the income-based approach also demonstrates some constraints.

- Income does not show how households/individuals allocate their income on spending. Therefore, the income approach indicates solely the economic capability of households/individuals without stating how the income was allocated to meet the needs of the households (Kumar, 1985; Deaton & Grosh, 2000).
- The income approach cannot capture that part of income that is saved or spent (Wong & Wong, 2004). Saving activity can be viewed as an essential strategy for people to cope with any unpredictable economic situation in their lives and it is commonly practiced in agrarian countries. Therefore, for countries where people have high rates of saving, implementing the income-based approach may exaggerate the extent of the welfare within the community (Wong & Wong, 2004).
- For poverty determination, low income is not necessarily equal to poverty. Any statistical analysis of poverty measures always produces proportions of households, ranging from low to high incomes. Thus the income distribution of the people has more to do with income inequality, rather than poor conditions (Kumar, 1985; Wong & Wong, 2004).

Overall, according to Deaton and Grosh (2000), the advantages and limitations of these two approaches may be the result of the technical aspects of surveys and how data is collected. Neither developed nor developing countries agree that collecting data on income and/or expenditure is easy. The following illustrates some difficulties with surveys:

- Expenditure does not recognize seasonal variation as do incomes. Most people do consume or spend everyday, whilst most people do not receive income everyday. To collect information on expenditure, a single visit for a survey is sufficient whilst, for surveys on income, multiple visits are needed (Deaton & Grosh, 2000).
- Information on income, which includes in-kind benefits (*e.g.* public subsidies), seasonal variability of income and self-employment income, from both agriculture and non-agriculture, is difficult to obtain (Deaton & Grosh, 2000; Sarlo, 2001; Sahn & Stifel, 2003). Furthermore, Deaton and Grosh (Deaton & Grosh, 2000) add that people might be reluctant to disclose information regarding their incomes.

Reasons for this could be because information regarding incomes can go to the internal revenue affairs or maybe the heads of the households do not want to share information about their income with other family members. In such cases, the income could be under reported (Deaton & Grosh, 2000; Sarlo, 2001; Sahn & Stifel, 2003).

- Collecting information on income is less costly than collecting information on expenditure. For example, the US Current Population Survey that surveys on income spends five times less per household than the US Consumer Expenditure Survey that collects information on consumption. In addition, due to more items collected, expenditure surveys are more time-consuming compared with income surveys (Deaton & Grosh, 2000).
- Formal wages are common in the developed countries, whilst informal wages are common in the developing countries. Many household surveys, particularly those in the developed countries, are able to collect data on income, whilst those in the developing countries are able to gather more data on expenditure. For that reason, the income-based approach is commonly used in developed countries whilst the consumption-based approach is preferred in developing countries (Deaton & Grosh, 2000).

3.2.2 *Non-economic approach*

The non-economic approach has mainly been developed to address the relative concept of welfare. Two known scholars, pioneers of the non-economic approach, are Townsend (1979, as cited in Fisher, 2001; Dignan & McLaughlin, 2002), and Mack and Lansley (1985, as cited in Fisher, 2001; Dignan & McLaughlin, 2002).

Townsend's Relative Deprivation of Poverty

In his study of poverty in Britain, Townsend (1979, as cited in Fisher, 2001) developed a poverty measure called the *relative deprivation of poverty*. He created a list of 12 indicators representing different kinds of social activities and material components (e.g. refrigerator, indoor water closet, etc.) (Dignan & McLaughlin, 2002). A summary of scores, indicating the numbers of each item that a household/individual does not have or consume is used to produce a deprivation index. The deprivation index is then linked with income. A minimum income line is taken from income, below the deprivation

index, that goes up disproportionately. Townsend's work has been recognized as a major contribution to the work of welfare, in particular poverty measures due to the innovative idea of a deprivation index (Dignan & McLaughlin, 2002).

However, Townsend's work was challenged in terms of methodology and the statistical validation of building a list of indicators (Dignan & McLaughlin, 2002). Townsend's work was then modified and developed by Mack and Lansley (1985, as cited in Fisher, 2001; Dignan & McLaughlin, 2002), and it is now called the *consensual deprivation indicator* approach.

The 'consensual deprivation indicator' approach

Mack and Lansley (1985, as cited in Fisher, 2001; Dignan & McLaughlin, 2002) took the concept of Townsend's work and developed the consensual deprivation indicator approach. This approach offers a concept that being poor is a result of suffering enforced lack of socially perceived necessities (did not have or would like to have, but could not afford) (Dignan & McLaughlin, 2002). From a pre-determined list of items, including goods, physical amenities and social activities, public respondents identified 22 items that were considered as necessary and negatively correlated with income. If more than 50 percent of the respondents identified an item as necessary, the item was categorized as a socially perceived necessity. This approach defined poor people as those who suffer three or more enforced lack of socially-perceived necessities (Fisher, 2001; Dignan & McLaughlin, 2002).

There are two major differences between the Townsend's method and the Mack and Lansley's method (Fisher, 2001; Dignan & McLaughlin, 2002).

- The deprivation indicators in Townsend's method were made by the investigator, whilst the 22 socially perceived necessities of the Mack and Lansley's method were derived from the representative public.
- Unlike Townsend's method, in the Mack and Lansley's method the question, of whether he/she did not have an item because he/she did not want it or because he/she wanted it but could not afford it, was asked of the respondents if they indicated that they did not have a particular item in the list of the socially perceived necessities.

A number of studies have developed variations on the non-economic approach. These include a Swedish model of welfare measure (Allards, 1993, as cited in Ramos & Silber, 2005), seven domains of life satisfaction introduced by Cummins (1996, as cited in Ramos & Silber, 2005), the Human Poverty Index (HPI) introduced by UNDP (1997, as cited in Said, 2000), the Living Condition Index of Dukeov *et al.* (2001), and the Poverty and Social Exclusion (PSE) and the Economic and Social Research Institute (ESRI)-Dublin approach developed by Ireland (Dignan & McLaughlin, 2002)

3.3 Determinants of household expenditure

The social aspect of the consumer is important in order to help understand the way consumers behave. The social factor of the consumer includes household socio-economic and demographic characteristics, such as income, size of household, area of living (urban-rural) and characteristics of household heads (Hazell & Roell, 1983; Wodon, 2000; Liu & Chern, 2001; Agbola, 2003; Beneito, 2003; Ferrer-i-Carbonell & Van Den Bergh, 2004).

3.3.1 Income

Consumption functions demonstrate that income is a key determinant factor of consumer behaviour (Mankiw, 2003). Income can have positive and negative relationship with expenditure (Bhandari & Smith, 2000; Kusago & Barham, 2001; Zhang, 2002; Hendriks & Lyne, 2003; Fan & Abdel-Ghany, 2004).

Two studies of food expenditure revealed that an increase in income would raise expenditure in meats, fruits and vegetables (Bhandari & Smith, 2000; Hendriks & Lyne, 2003), alcohol, fish, lard and sugars (Bhandari & Smith, 2000), but would reduce expenditure in staple foods (Hendriks & Lyne, 2003). In a study of food and non-food expenditure, Fan and Abdel-Ghany (2004) report that income is inversely related with expenditure such as food at home, fuel and utilities, health insurance, gasoline, local public transportation and education but positively related to expenditure which include household operations, apparel, vacation, lodging, cash contributions and insurances/pension.

Income also demonstrates that it inter-connects with other socio-economic and demographic characteristics. Two studies of households observe that income has a significant interaction with education level (Bhandari & Smith, 2000) and gender (Kusago & Barham, 2001). In addition, income is also affected by countries' economic development, as reported by Attanasio & Szekely (2004).

3.3.2 Size of household

The size of household, representing the total number of household members, is the most basic demographic characteristic of a household (Bongaarts, 2001). It is an important component of the economic unit in demand analyses, due to the fact that household members would interact in a variety of ways. Comparing developed and developing countries, Bongaarts (2001) observes that the household size of the developed countries has steadily declined from five people, in the middle of the nineteenth century to between two and three in 1990. Meanwhile, during 1990-1998, the household size of the developing countries was around 4.8 people in Latin America, 5.1 people in Asia, 5.3 people in Sub-Saharan Africa and 5.6 people in the Near East/North Africa (Bongaarts, 2001).

Some studies of food demand analyses reveal that the proportion of the budget expenditure spent on food declined as the size of households increased (Kinsey, 1994; Beegle, *et al.*, 1999; Wodon, 2000; Gibson, 2002; Gan & Vernon, 2003). Kusago and Barham (2001) argue that the significant negative effect of the household size on the food expenditure was due to economies of scale.

With respect to food items, other studies on food expenditure report that size of households was positively related with expenditure on staple foods (grain, cereals, and tubers) (Hakim, 1994; Zhang, 2002; Agbola, 2003), nuts, poultry products, pulses and condiments (Zhang, 2002) and dairy products (Agbola, 2003) but negatively related with expenditure on meat, fish and fruits (Agbola, 2003).

3.3.3 Area of living

In the last 50 years, the world has faced an increasing percentage in its urban populations, as demonstrated in Table 3.1 (UN, 2004). The percentage of urban people

increased from 29.1 percent in 1950 to 48.3 percent in 2003 and it is projected to reach 60.8 percent in 2030. From 1950-2003, in all regions, except Africa and Asia, the average percentage of urban population was more than 50 percent. Africa and Asia are projected to have more than 50 percent of urban dwellers by 2030 (Table 3.1).

Table 3.1 Urban population in the world

Region	(%)				
	1950	1975	2000	2003	2030
Africa	14.9	25.3	37.1	38.7	53.5
Asia	16.6	24.0	37.1	38.8	54.5
Europe	51.2	66.0	72.7	73.0	79.6
Latin America and the Caribbean	41.9	61.2	75.5	76.8	84.6
North America	63.9	73.8	79.1	80.2	86.9
Oceania	60.6	71.7	72.7	73.1	74.9
World	29.1	37.3	47.1	48.3	60.8

Source: UN (2004).

Urban and rural areas are different in a variety of ways. For example, urban people demonstrate a more modern lifestyle relative to rural people (Purba, *et al.*, 1999). Furthermore, the average income and education level of urban dwellers is higher than rural dwellers (Kakwani & Krongkaew, 2000; Webb & Lapping, 2002).

Various studies of food demand analyses report that, overall, urban households purchase a higher proportion of food products such as baked products, seafood products, dairy products, eggs, fish, fruit and meat (Bhandari & Smith, 2000; Zhang, 2002), animal products, fats, fruits, vegetables and sweeteners (Webb, 2002; Dien, *et al.*, 2004) compared to rural households. However, urban households spend a lesser amount on staple foods (rice, starch and other cereals) than the rural households (Dien, *et al.*, 2004). In addition, rural households increase expenditure on food such as horticultural products, meats and poultry products with any additional income (Hendriks & Lyne, 2003).

3.3.4 Characteristics of household head

In studies of household expenditure, the characteristics of the household head are considered to be important, for several reasons, such as the following:

- The head of the household is the main earner in the household (Kakwani & Krongkaew, 2000; Luo, *et al.*, 2001).

- The adult household head has the most influence over expenditure within the household (Bhandari & Smith, 2000).
- The head of the household is usually the person who distributes food within the household (Luo, *et al.*, 2001).

Literature reviews suggested that some of the most important characteristics of the household head, that could affect expenditure decision-making process, are age, gender, marital status and education.

3.3.4.1 Age

Different ages produce different lifestyles and health conditions. For example, children eat more milk products, eggs, soups, snack foods, sweet beverages and desserts, but fewer fruits and vegetables, table spreads and meat. Meanwhile, elderly people eat more fresh fruit, vegetables, cereals, baked products, poultry, pork and oils, but less red meat, milk, soft drinks, prepared foods, alcohol and take-away foods (Kinsey, 1994). Younger consumers tend to seek a larger variety of foods, relative to older consumers (Zhang, 2002). Agbola (2003) noted that older household heads preferred expenditure on fruits and vegetables and limited expenditure in meat, fish and dairy products.

3.3.4.2 Gender

Bongaarts (2001) reports, that during 1990-1998, the majority of household heads in developing countries were males. However, for the same period the percentages of female-headed households were still rather substantial; 13 percent in the Near East/North Africa, 16 percent in Asia, 22 percent in Sub-Saharan Africa, and 24 percent in Latin America. In addition, male-headed households tended to have a larger size of household relative to female-headed households. The reason for this could be due to that fact that female-headed households were very rarely co-residing with a spouse and thus they would have less number of children and adults (Bongaarts, 2001).

Male-headed households had a larger percentage of expenditure budget spent on food compared with female-headed households (Frazao, 1993; Wodon, 2000). This is supported by the expenditure elasticity for food, for male-headed households, that is higher than for female-headed households (Rogers, 1996). Gender showed no

significant effect in the making of decisions (Liu & Chern, 2001), but it did demonstrate preferences in buying certain food products (Rogers, 1996; Agbola, 2003). For example, the female-headed households tended to buy more expensive and higher quality foods such as meat, poultry, fish and other animal food products (Rogers, 1996), whilst the male-headed households preferred grains (*e.g* rice) and vegetables (*e.g* beans) (Rogers, 1996; Agbola, 2003).

3.3.4.3 Marital status

Wodon (2000) reports that a household head without a spouse, either married or single, were seen to perform better than a household head with a spouse. A single parent household spent a smaller percentage of household expenditure per person than two parent households (Frazao, 1993).

3.3.4.4 Education

Education is an important factor affecting decision-making regarding expenditure in households. In urban Java-Indonesia, the level of education was more influential in purchasing food rather than the income (Rae, 1999). Households with both the heads and the spouses having higher education have a higher expenditure compared to those having lower education (Wodon, 2000). In urban areas of Shanghai-China, the higher educated consumers tended to differentiate their consumption on food relative to the lower educated consumers (Zhang, 2002). The higher educated household heads were likely to consume more meat and fish, dairy products and fruit but less grains, vegetables and other foods, compared to the less educated household heads (Liu & Chern, 2001; Agbola, 2003).

Education, however, seems to have a negative relationship with economic shocks. In Indonesia, the greatest impact from the 1997 economic crisis was upon the higher educated people (Beegle, *et al.*, 1999). A crisis of labour shock and the El-Nino shock in the Philippines produced a greater impact on expenditure for people with a higher level of education relative to those with a lower level of education (Datt & Hoogeveen, 2003).

3.4 Related studies of household expenditure

This section presents the results of previous studies related to the use of expenditure-based approach in estimating the levels of household living.

3.4.1 *Patterns of household expenditure*

To measure the levels of welfare in Indonesian households during the rapid economic development of 1981, 1984, 1987, 1990 and 1993, Widjajanti and Li (1996) used the measurement of total expenditure and percentage of food and non-food expenditure. They found that the total expenditure of Indonesian households steadily increased from 27,603 rupiah in 1981 to 39,716 rupiah in 1993 (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006). The share of food in the household expenditure rose from 61.53 percent in 1981, to 63.24 in 1984, but then it continuously declined to 61.28 percent in 1987, to 60.36 percent in 1990, and further to 57 percent in 1993. Overall, the results of the study suggest that, referring to Engel's law, the increased total expenditure and the relatively decreased percentage of food expenditure of Indonesian households may indicate that the levels of living within Indonesian households improved during the rapid economic development (1981-1993) of Indonesia (Widjajanti & Li, 1996).

In a different study, Ishida, *et al.* (2003) estimated the levels of welfare of West Malaysian households during the Malaysian economic development of 1973, 1980 and 1993/1994. They report that the food expenditure of West Malaysian households fell drastically from 45.1 percent in 1973 to 35.4 percent in 1980 and remained stable at around 35 percent in 1980 relative to 1993/1994. Again, with reference to Engel's law, the declined percentage of food expenditure in 1980, relative with 1973, may imply that West Malaysian households increased their economic status due to the impact of Malaysian development during the same years. The relatively stable percentage of food expenditure in 1980 and 1993/1994 could be explained by the trade-off between at-home food and away-home food. At-home food declined from 28.4 percent in 1980 to 22.7 percent in 1993/1994, whilst the away-home food increased from 7.1 percent in 1980 to 12.5 percent in 1993/1994. This increased percentage of away-home food may indicate that the economic status of West Malaysian households continued to improve in 1993/1994, compared to 1980 (Ishida, *et al.*, 2003).

In order to investigate how the Indonesian economic crisis in 1997 impacted on the economic status of households in Indonesia, Beegle, *et al.* (1999) calculated the percentage of food expenditure and non-food expenditure of Indonesian households in 1997 and 1998. They estimated that the percentage of food expenditure of Indonesian households increased significantly in 1998, relative to 1997. In 1998, the percentage of food expenditure was 60 percent for the urban households and 80 percent for the rural households. During 1997-1998, the percentage of non-food expenditure in household goods, clothing, housing, health, education and recreation declined in both the urban and rural areas. However, the percentage of expenditure in tobacco and alcohol increased in the urban areas and decreased in the rural areas. The increased percentage of food expenditure in 1998 relative to 1997 may suggest that the 1997 economic crisis put into decline the economic welfare of Indonesian households in 1998 relative to 1997 (Beegle, *et al.*, 1999).

Wong and Wong (2004) implemented a method of finding the median of household expenditure and percentage of food expenditure, as an attempt to measure the welfare level of households in Hong Kong which was under economic development in 1994/1995 and 1999/2000. Between 1994/95 and 1999/2000, the median expenditure of Hong Kong households increased, on average, by 16.3 percent whilst the percentage of food expenditure declined, on average, by 6 percent. The results of this study may suggest that the Hong Kong households improved their economic welfare in 1999/2000 relative to 1994/1995 (Wong & Wong, 2004).

Several studies compared households with different levels of income as an attempt to know how the households allocated their income on food expenditure. The results of these studies were consistent with Engel's law stating that, as income increases, the proportion of income spent on food would decline (Hazell & Roell, 1983; Delgado, *et al.*, 1998; Kayastha, 1999; Webb & Lapping, 2002). The wealthier households in Muda, Malaysia allocated average percentage of household expenditure on food that was 46 percent, whilst the poorer households in Gusau, Nigeria allocated 75 percent (Hazell & Roell, 1983). In South-western Niger, Africa, the food percentage of the household budget was 74.95 percent for the wealthier households in the Sudano-Guinean zone and 76.54 percent for the poorer households in the Sudano-Sahelian zone (Delgado, *et al.*, 1998).

From Senegal, Africa, it was reported that the average annual expenditure per capita on food was 72.4 percent for the wealthier households in the Southern Basin, whilst it was 78.3 percent for the poorer households in the Central Basin (Delgado, *et al.*, 1998). In Nepal, the Haraicha households, with the highest income, spent 41 percent of household expenditure on food, whilst the Hathikharka households, with the lowest income, allocated 48 percent of household expenditure on food (Kayastha, 1999). A World Health Organization's study in Ghana noted that the highest income group of households used 41 percent of their income on food expenditure, whilst the poorest income group of households used 61 percent of their income on food expenditure (Webb & Lapping, 2002).

3.4.2 *Expenditure patterns on food and non-food items*

This section illustrates how households, on different levels of living, allocate their expenditure on food and non-food items. The households indicated that, as their economic purchasing power improved, they altered their expenditure from necessity to luxury items of expenditure (Fritsche, 1996; McKenzie, 2001; Wasito, *et al.*, 2001; Ishida, *et al.*, 2003).

In 1981, Ethiopian rural households demonstrated that, as the income of the households increased, the percentage of expenditure on food items such as *kocho* (*ensete*), vegetables, unmilled pulses and fish, and on non-food items, including housing, services, drinks and stimulants declined, whilst the percentage of expenditure on food, such as cereals, dairy products, milled/split pulses, spices, meats, and fruits and on non-food items including clothing and footwear, household equipment and household operations increased. These patterns of expenditure on food and non-food may indicate that *kocho* (*ensete*), vegetables, unmilled pulses, fish, housing, services, drinks and stimulants are necessity items; while cereals, dairy products, milled/split pulse, spices, meats and fruits, clothing and footwear, households equipment and operations were considered luxury items of expenditure for the Ethiopian households (Fritsche, 1996).

Surveying Indonesian households in urban East Jakarta in 1993, 1994, 1994, 1998 and 1999, Wasito, *et al.* (2001) observed that the 1997 economic crisis reduced the household expenditure on food, such as bread and noodles, eggs, milk and poultry

products. This may imply that these food items were considered luxuries by Indonesian households. The study also found that the 1997 economic crisis did not impact negatively on rice expenditure. This could be explained by the fact that the Indonesian government launched a subsidy programme, called the *Safety Net Programme*, which subsidised the price of rice for the poor during the economic crisis.

A crisis-related study of the 1995 Peso crisis in Mexico showed that, due to the economic crisis, Mexican households increased all food expenditure, except on fruits, desserts and sweets and alcohol beverages but reduced all non-food expenditure, except education. On the other hand, during the recovery period, all food expenditure in Mexican households declined, except for milk, fruits, desserts and sweets, alcohol beverages, away-home food and it increased in all non-food expenditure, except public transportation and education. These patterns of household expenditure may indicate that, for Mexican households, all food items, except milk, fruits, desserts and sweets, alcohol beverages, and away-home food were considered necessities, whilst all non-food items, except education, were perceived as luxury items (McKenzie, 2001).

A study in West Malaysian households investigated the allocation of household income. Ishida, *et al.* (2003) calculated expenditure elasticity for various food items for three periods 1974, 1980 and 1993/1994. They found that although the expenditure elasticity for all food items had declined during the years, the expenditure elasticities for rice and sugar were the lowest relative to other food items. The smallest expenditure elasticities were for sugar and rice, followed by fish, bread and cereals, oils and fats, milk and eggs, fruits and vegetables, other foods, meats and away-home food. The results of the study may suggest that as West Malaysian households improve their economic levels of living; they would be most likely to increase their expenditure on higher quality foods such as milk and eggs, fruits and vegetables, meats and away-home food.

Rae (1996) developed groups of households for households in Java, Indonesia to capture the patterns of their food expenditure. He identified that there were five types of households in Java. These five household types, from cluster #1 through to cluster #5, showed different stages of food expenditure patterns moving, on overall, from 'traditional' to 'non-traditional'. The rice expenditure fell from cluster #1 to cluster #4. The households of cluster #1, which had the second largest proportion of households,

demonstrated a traditional developing Asian diet, which 80 percent of food requirement, on average, came from rice. Other food groups made a minor contribution in these households. Cluster #2 and cluster #3 showed a gradual transformation in diet proceeds from cluster #1 through to cluster #4. The largest percentage of urban Java households fell into cluster #2. A non-traditional diet was performed by cluster #4, which it spent the lowest percentage of rice expenditure and the largest percentage of other food groups, except root crops, compared to other clusters. Meanwhile, cluster #5 exhibited a different pattern of food expenditure, relative to other clusters. Cluster #5 spent a smaller percentage of rice expenditure than cluster #4. Expenditure in all other food groups, except fruits, vegetables and wheat/flour was similar as that in cluster #2. Compared to other clusters, root crops and some other food crops were substituted for rice. Therefore, cluster #5 was named the ‘traditional-high root crops’ cluster.

Using cluster analysis, Bertail and Caillavet (2003) developed six groups of households for households in France, based on expenditure on fruits and vegetables. The expenditure on fruits and vegetables gradually increased, on overall, from K1 through to K6. K1 was a multi-deprived class, where expenditure on fruits and vegetables was the lowest. K1 households had a rural profile, and earned the lowest income and education. K2 consisted of many families with children. The fruit and vegetable expenditure of K2 was marked by fruit juices and processed products that were suitable for active households with children. K3 households showed deprivation in fruit and vegetable expenditure and they preferred canned vegetables. K4 exhibited low expenditure in fruits and vegetables but not in expenditure on fresh products. High income and the highest expenditure in fruits and vegetables were demonstrated by the households of K5. The households of K6 earned the highest income and reached a high level of fruit and vegetable expenditure.

3.5 Summary

A definition of welfare addresses an absolute and relative concept. The absolute concept of welfare views welfare based on material needs, whilst the relative one defines welfare from both a standard of living and a quality of life point of view.

A number of approaches have been developed to measure levels of welfare. Based on the variables used, these approaches could be divided into two broad approaches: the economic and non-economic approaches. The economic approach focuses its measurement on a standard of living, whilst the non-economic approach is concerned more with the quality of life. Between both approaches, literature notes that the economic approach has been employed dominantly and it has become the standard measure. The economic approach has two major methods: an expenditure-based and an income-based approach.

The expenditure-based approach estimates the actual things (goods and services) that households/individuals purchase, whilst the income-based approach measures the economic capability of households/individuals to buy things. Both approaches have advantages and disadvantages. Partly due to some technical surveys, the expenditure-based approach is popular in the developing countries, whilst the income-based approach is preferred in the developed countries.

Literature suggests that the factors of income, areas of living (urban and rural), size of household and characteristics of household heads (*e.g.* age, gender, marital status and education) affect the decision making regarding household expenditure and thus this factor could be used to help understand consumer behaviour.

To measure the level of household welfare, some studies in different countries, using the expenditure-based approach, employed measurements of total expenditure and percentage of food expenditure. These studies demonstrate that, as the economy of these countries grow, the economic status of the households also improves, as indicated by total expenditure increasing and the percentage of household expenditure allocated on food then decreasing (Widjajanti & Li, 1996; Beegle, *et al.*, 1999; Ishida, *et al.*, 2003; Wong & Wong, 2004).

Some studies compare households with different income levels and the results show that the poorer groups of households spent more percentage of food expenditure compared with the wealthier groups of households (Hazell & Roell, 1983; Delgado, *et al.*, 1998; Kayastha, 1999; Webb & Lapping, 2002). When the economic status of households declined, they would prioritise expenditure on food relative to non-food items

(McKenzie, 2001; Wasito, *et al.*, 2001). Within the increased food expenditure, the households would increase percentage of expenditure on cereals and grains (staple foods) and decrease percentage of expenditure on more luxury items including meats, dairy products, fruits and away-home foods (Fritsche, 1996; Luo, *et al.*, 2001; Ishida, *et al.*, 2003). The decline in non-food expenditure includes clothing, household goods, furniture, entertainment and personal care services (Beegle, *et al.*, 1999; McKenzie, 2001; Wasito, *et al.*, 2001).

Studies observing different types of households based on their expenditure patterns report that these household types demonstrated different stages of expenditure patterns. The five clusters of households in Java, Indonesia show that, generally from cluster #1 to cluster #5, their diet moved from a 'traditional' Asian diet to a 'non-traditional' diet (Rae, 1996). Using patterns of fruit and vegetable expenditure, Bertail and Caillavet (2003) report that the expenditure on fruits and vegetables increased, overall, from K1 through to K6. In addition, both Rae (1996) and Bertail and Caillavet (2003) observe that there was, at least, one cluster/group of households that showed a different pattern of expenditure.

The reviewed literature above provides a sound reference for this study. Steps of activities taken in this research are discussed in the next chapter.

Chapter 4

METHODOLOGY

This chapter describes the process of research that was carried out in this study. It is structured into four sections. The first section discusses the research process that consists of the sequence of activities undertaken in the study. The second section discusses the process of the data analysis. Challenges and limitations of this study are outlined in the third section. The fourth section provides a summary.

4.1 Research process

Conducting research is a process. The research process involves a series of activities that are interconnected (Bouma, 1996) or steps that are arranged in sequence (Neuman & Kreuger, 2003). Bouma (1996) outlines the research process into three phases:

- The first phase is called *essential first steps* that consist of five activities:
 - selecting, narrowing and formulating the problem to be studied,
 - selecting a research design,
 - designing and devising measures for variables,
 - setting up tables for analysis, and
 - selecting a sample.
- The second phase is *data collection*, in which covers the activities of collecting data and summarising and organizing that data.
- *Analysis and interpretation* is the third phase that has four activities:
 - relating data to the research question,
 - drawing conclusions,
 - assessing the limitations of the study, and
 - making suggestions for further research.

In a different way of grouping the activities, Neuman and Kreuger (2003) offer seven steps for the research process:

- choosing the topic,
- focusing on the research question,

- designing the study,
- collecting data,
- analysing data,
- interpreting data, and
- presenting the research to others.

This study adopted the following steps for the research process:

- problem identification,
- literature review,
- aim and objectives of the research,
- data collection,
- data analysis, and
- data interpretation and discussion.

These research process steps in this study are explained below.

4.1.1 Problem identification

In general, a research process begins with identifying a research problem (Mikkelsen, 1995). This study outlines the problem of research as follows:

For the last three decades, Indonesia has succeeded in developing its economy. From the mid-1960s, up to before the economic crisis in Indonesia in 1997, the country grew at an average rate of 6.5 percent per year (Hill, 2000). The economic crisis has negatively affected the economy, which was characterised by contraction of the GDP, fluctuations in the exchange rate, escalation of prices, deterioration of purchasing power, a rising proportion of unemployment and the rise of poverty (ADB, 1998a; Beegle, *et al.*, 1999; ADB, 2000; Wasito, *et al.*, 2001; ADB, 2002; 2004a). By 1999, nearly two years after the 1997 crisis, the Indonesian economy began to show some starting signs of recovery that were indicated by strengthened macroeconomic indicators (ADB, 2000; Soekirman, 2001). The growth of GDP became positive 0.8 percent in 1999, after a negative 13.1 percent a year earlier (ADB, 2000). Since 1999, GDP has continued to grow. It reached 4.8 percent in 2000, dropped to 3.5 percent in 2001, but rose steadily to 3.7 percent in 2002 and 4.1 percent in 2003 (ADB, 2000; 2001a; 2002;

2003; 2004a). Economic development brings social development. One indicator of social development is household expenditure (Hill, 2000). Given the fact that Indonesia experienced an economic crisis in 1997, this study focuses on investigating the impact of the 1997 economic crisis on the economic welfare of households in Indonesia, in terms of their expenditure.

4.1.2 Literature review

Undertaking a literature review is a process of “*searching, obtaining and reading*” various sources of literature in order to become familiar with a chosen topic (Hart, 2001, p.2). Furthermore, Fink (Fink, 2005, p.3) emphasises that reviewing literature means to “*identify, evaluate and synthesize*” other people’s work as an attempt to understand the current knowledge of a chosen topic. For a more complete understanding, O’Leary (2004, p.66) argue that a literature review can “*inspire, inform, educate and enlighten*” from the beginning up to the end of the research. It is illustrated that

“Literature review generates ideas, helps form significant questions, is instrumental in the process of research design, and is central to the process of writing-up” (O’Leary, 2004, p.66).

In general, the literature review can be divided into two major areas (Hart, 2001):

- Literature that is relevant to the topic.
- Literature that relates to research methodology and techniques of data collection.

This study reviewed literature relating to the topic of this research, which included both theory and related studies that could provide various methods to measure the economic welfare level of the Indonesian households. Literature relating to research methodology was also explored in order to design an appropriate research for this study.

The researcher studies various sources of literature such as:

- Books
- Journals – published and online
- Papers – published and unpublished

- Organizational publications – Asian Development Bank (ADB), the World Bank (WB), the Library of Congress (LOC), etc.
- Publications from the Indonesian government institutions – the Indonesian Central Agency for Statistics (CBS), the Indonesian Ministry of Agriculture, etc.
- Internet

4.1.3 Aim and objectives of the research

After the problem has been outlined, the next step is focusing on aim and objectives of the research (Bryman, 2004). This study narrowed down the problem of research and formulated a general aim for the research.

The general aim of this research is to study the impact of the 1997 economic crisis on the economic level of living of households in Indonesia, by looking at the changes of expenditure of these households.

In order to achieve this general aim, five objectives were identified:

- To examine changes in the Indonesian economy before and after the economic crisis in 1997.
- To review the socio-demographic characteristics of Indonesian households.
- To investigate changes in expenditure patterns of Indonesian households in order to measure their buying capacity before and after the economic crisis in 1997.
- To investigate changes in household expenditure patterns on different food and non-food items before and after the 1997 economic crisis in Indonesia.
- To develop a typology of Indonesian households based on their expenditure.

4.1.4 Data collection

After the aim and objectives of a research are clarified, the next task is to plan the implementation of the study (Neuman & Kreuger, 2003).

Denscombe (1998) suggests that the plan should address strategies and methods of research and the way the data is analysed. This type of plan is called ‘research design’ and it includes activities of data collection and analysis (Bryman, 2004).

Mikkelsen (1995) and Denscombe (1998) argue that there are no ‘best choices’ of strategies, methods, techniques and tools for data collection. The data collection can choose one or a combination of these strategies, methods, techniques and tools within the same study. However, there are some considerations that should be taken into account in choosing these strategies, methods, techniques and tools and they include: aim of the study; resources and time available; the political context; and the intentions of the researchers (Mikkelsen, 1995). Denscombe (1998) also adds the appropriateness of the research approaches to specific aspects of investigations and problems.

In general, there are four techniques for data collection: experiments; surveys; content analysis; and existing statistics (Mikkelsen, 1995; Denscombe, 1998; Neuman & Kreuger, 2003). Neuman and Kreuger (2003) define the four techniques. *Experiment* is a type of research that requires certain treatments given by researchers. A research using a *survey* technique asks respondents questions, written or unwritten. Studying information or content in written or symbolic materials (*e.g.* pictures, movies, songs, lyrics, etc.) is what researchers undertake in *content analysis research*. The last technique, *existing statistic research* means researchers analyse data that has been previously gathered by others.

This study employed ‘existing statistic’ data because of limitation in its resources (particularly time, money and personnel). Information required for this study was expenditure, income and the socio-demographic characteristics of Indonesian households. This information can be found in national surveys in which gather national and representative data for households. Literature suggests that conducting a national survey is expensive and time consuming (Dale, *et al.*, 1988). As a consequence of employing existing statistics, this study applied a method of data analysis, namely, secondary analysis.

4.1.4.1 Secondary analysis

Basically, secondary analysis is a type of data analysis that uses existing materials (Kiecolt & Nathan, 1985). It can mean a way of, “extracting” knowledge which is different from that which has been conducted by the original surveys (Hyman, 1972), and it can be seen as a work of, “re-analysing” existing data (Dale, *et al.*, 1988) or it can

be conducted for the purpose of, investigating new questions or verifying previous studies (Heaton, 2004).

The researchers in the secondary analysis are independent and they are not involved in the original data collection (Hyman, 1972; Kiecolt & Nathan, 1985; Dale, *et al.*, 1988; Neuman & Kreuger, 2003; Bryman, 2004). Furthermore, Heaton (2004) argues that the researchers and the data collectors may or may not work together.

Heaton (2004, p.12-13) introduces three different modes of data sharing in the secondary analysis:

- *Formal* data sharing – in which data is officially made available for data sharing. The data collectors and the researchers are independent.
- *Informal* data sharing – in which data may be obtained from official organisations or primary researchers. The data collectors may or may not become part of a research team. Two or more primary researchers may combine their data and jointly work to form a new secondary project.
- *Auto-data* – in which no data sharing, instead the researchers re-use their own data.

There are a number of benefits in undertaking secondary analysis. The major advantage is resource saving: time, money and personnel (Hyman, 1972; Kiecolt & Nathan, 1985; Dale, *et al.*, 1988; Neuman & Kreuger, 2003; Bryman, 2004). Conducting a national survey requires great deal of time and cost, good techniques of survey and abundant personnel for data collection. Thus it is an expensive and difficult task (Kiecolt & Nathan, 1985; Dale, *et al.*, 1988).

Other benefits of the secondary analysis were outlined by various authors (Hyman, 1972; Kiecolt & Nathan, 1985; Dale, *et al.*, 1988; Bryman, 2004; Heaton, 2004). They are as follows:

- larger types and number of observations; studying the past, trends and changes; comparative studies and improving general knowledge through replication and enlargement; and elevating and enlarging theory (Hyman, 1972);

- it avoids problems of data collection; can be used in exploratory research prior to primary field surveys, has variety of research designs (trend, cohort, time-series and comparative studies); and it is complementary with other types of data (Kiecolt & Nathan, 1985);
- high quality of data; longitudinal, sub-group and cross-cultural analysis; more time for data analysis; and new interpretations (Dale, *et al.*, 1988; Bryman, 2004);
- verification, refutation or refinement of the original results; improves methods and analytical techniques; encourages multiple perspectives; promotes mixed methods; promotes cross-disciplinary and cross-boundary research (Heaton, 2004).

Secondary analysis has also limitations which include:

- problems within surveys and choice of indicators (Hyman, 1972);
- problems of locating data and/or acquiring data from archives, inadequate documentation of data, data aggregation, data quality and using repeated data (Kiecolt & Nathan, 1985);
- not enough information regarding the nature of data collection (Sedlack & Stanley, 1992);
- lack of familiarity with data, complexity of data, no control on quality of data, and absence of key variables (Bryman, 2004);
- poor data and documentation, lack of credentials from some secondary users, risk to confidentiality, difficulties of obtaining informed consent and incompatibility of computer hardware and software of data donors and data users (Heaton, 2004);
- reliability and validity of data (Hyman, 1972; Kiecolt & Nathan, 1985; Dale, *et al.*, 1988; Neuman & Kreuger, 2003; Bryman, 2004).

Early ideas of working with secondary analysis were initially drawn from surveys (Hyman, 1972). Although emphasising the use of data from surveys, Dale, *et al.* (1988) suggests the possibility of using materials, other than data from surveys, in secondary analysis. More recently, Heaton (2004) and Bryman (2004) argue that secondary analysis may entail either quantitative or qualitative pre-existing data.

There are two major types of materials used in secondary analysis.

- large-scale survey, census, public records, official reports of organizations and government agencies and social surveys are common existing materials used in secondary analysis (Hyman, 1972; Kiecolt & Nathan, 1985; Dale, *et al.*, 1988; Bouma, 1996; Neuman & Kreuger, 2003; Bryman, 2004; Heaton, 2004);
- secondary analysis also accepts tape-recording interviews, video-recording (Kiecolt & Nathan, 1985; Dale, *et al.*, 1988; Heaton, 2004), field-notes, observational records and tapes and transcripts of interviews and focus groups (Heaton, 2004).

Large surveys of materials from the former above tend to be widely used in a quantitative type of research and is preferred by economists and business analysts (Hyman, 1972; Kiecolt & Nathan, 1985; Dale, *et al.*, 1988; Denscombe, 1998; Neuman & Kreuger, 2003; Bryman, 2004; Heaton, 2004), while the latter is generally used in a qualitative type of research (Heaton, 2004).

By employing existing statistics, this study obtained some advantages such as:

- It saved resources, particularly time, money and personnel because it did not need to conduct its own national survey.
- It conducted a national and large-scale household study that could be representative of households in Indonesia.
- It studied past trends or conducted a longitudinal study and therefore, the study pursued the objectives of the identified research.

The researcher and the data collectors in this study were independent from each other. Therefore, the study employed *formal* data sharing. The nature of the data sets, which were numerical figures, led this study towards a quantitative type of research rather than a qualitative type of research.

4.1.4.2 Quantitative versus qualitative type of study

The quantitative type has often been contrasted with the qualitative type of research (Denscombe, 1998; Neuman & Kreuger, 2003; Bryman, 2004). Denscombe (1998) reminded us that the real social worlds within which research is generally conducted

could not be categorised precisely into either quantitative or qualitative type. In fact, these two types may complement each other (Neuman & Kreuger, 2003). Therefore, the distinction between both of them is *ambiguous* (Bryman, 2004).

There are sizeable numbers of characteristics that differentiate between the quantitative and the qualitative type of research. A main distinction between quantitative and qualitative type of research is from the numeric item point of view (Denscombe, 1998; Schloss & Smith, 1999; Neuman & Kreuger, 2003). Quantitative research tends to be associated with numbers, whilst qualitative research tends to be associated with words as the unit of analysis (Denscombe, 1998). Quantitative research heavily exploits numeric items for drawing conclusions, whilst qualitative research assumes that social phenomena are complex and interactive so that perceptions could not be drawn based on a numeric feature (Schloss & Smith, 1999). Somewhat differently, Neuman & Kreuger (2003) suggest that quantitative and qualitative research could have the options of choosing between soft data (*e.g.* impressions, words, sentences, photos and symbols) and hard data (*e.g.* numbers).

Other differences between quantitative and qualitative research include:

- Quantitative research answers questions of how much, how many, or how often and generally uses time for preparation before data collection whilst qualitative research answers questions of 'what' and generally uses time for data collection and interpretation (Bouma, 1996).
- Denscombe (1998) adds that quantitative research is a large-scale of study, applying specific perspectives, not involving researchers and implementing pre-determined research design; whereas qualitative research is a small-scale of study, applying holistic perspectives, involving researchers and implementing emergent research design.

Generally, this study of analysing Indonesian households could easily fit into a quantitative type of research, based on the following perspectives:

- The information on Indonesian households was obtained from a national survey, so it was large scale, which is commonly involved with quantitative research.

- The data, in terms of expenditure, income and socio-demographic characteristics, was a numerical type data. This type of data is the main feature of quantitative research.
- This study used secondary data of existing statistics, which did not involve with data collection. Also there are no records on the behaviour of Indonesian households during the survey, which are the main concerns in a qualitative type of research.

4.1.4.3 Longitudinal and time-series of study

From a time dimension point of view, there are two kinds of research: cross-sectional and longitudinal (Neuman & Kreuger, 2003). Observations in *cross-sectional research* are done at one point in time. *Longitudinal research* involves observations at more than one time. There are three types of longitudinal research: time-series, panel and cohort. The *time-series study* collects information, from different subjects at one time of data collection, while the *panel study* observes exactly the same subjects at different time of data collection. The *cohort study* is similar to the panel study, but it categorises subjects, who share a similar life experience and hence the focus of the cohort study is on category, not specific individuals.

This study estimates the expenditure of Indonesian households before and after the 1997 economic crisis. Three data sets from the SUSENAS were employed: 1996, 1999 and 2002. Households in the three data sets were not the same. Therefore, this study could be categorised as a longitudinal and time-series study.

4.1.4.4 Selection of data set

After the decision of employing secondary data has been made, the next step is to select and choose the data that is going to be used for the study (Dale, *et al.*, 1988). There are numerous sources for data archives that can be chosen. Questions for selecting and choosing relevant data are, for examples (Dale, *et al.*, 1988):

- What kind of information has the data collected?
- Does the data cover the range of issues that interests the researcher?
- What are the sampling frame and the unit of sampling used?
- What are the levels of data: individuals or households?

-
- Who is responsible for collection and quality of data?
 - Is the survey nationally representative?
 - When was the data collected?
 - Is the data still relevant?

This study needed information collected by a national survey because it was necessary to develop a national and representative study for households in Indonesia. The information concerned Indonesian households in terms of expenditure, income and socio-demographic characteristics.

A common institution that conducts a national survey in Indonesia is the Central Agency for Statistics (CBS), the official government institution for statistics. The CBS conducts a number of surveys at the community level. These surveys include the Population Census (*Sensus Penduduk - SP*), the Intra-census Population Survey (*Survei Penduduk Antar Sensus - SUPAS*), the National Labour Force Survey (*Survei Angkatan Kerja Nasional - SAKERNAS*) and the National Socio-Economic Survey (*Survey Sosial Ekonomi Nasional - SUSENAS*).

It was decided in this study to use the data sets from the SUSENAS (National Socio-Economic Survey), based on the following reasons:

- The SUSENAS is the national household survey that consists of information relating to expenditure, income and characteristics of households, which is the primary interest and relevance of this study.
- It covers all the provinces in Indonesia and thus, it is representatives of Indonesian households.
- An Indonesian official institution of statistics controls the SUSENAS and hence this would increase the reliability and validity of the data.
- It is conducted annually (the *core* questionnaire is used every year; and the *module* questionnaire is used every three years) and therefore, the data could be used for a longitudinal type of research;
- It is available for the years that cover this study and therefore, the study could analyse the expenditure pattern of Indonesian households before and after the 1997 economic crisis.

Other sources of data were also considered for this study. They include the Indonesian Family Life Survey (IFLS) (13 provinces); the 100 Village Survey (8 provinces); and the Participatory Assessment Study (13 provinces). However, these surveys were small; only covered certain provinces; and only available for particular years. Therefore, they could be considered as being not representative of Indonesian households than those in the SUSENAS.

This study ordered three data sets from the SUSENAS for the years 1996, 1999 and 2002 to investigate the expenditure of Indonesian households before and after the economic crisis in 1997. The 1996 data set represent the period before the crisis (before 1997), the 1999 data set represent the period the post-crisis – initial adjustment (1998-2000) and the 2002 data set represent the period the post-crisis – further adjustment (after 2001). The order, with a list of variables required was placed through an email to the Central Agency for Statistics (CBS) in Indonesia. After the requested order was accepted, a form of agreement was signed between the CBS and the users, indicating compliance with certain conditions for data use, as outlined by the CBS. After the administration process of ordering the SUSENAS was completed, the data sets of the 1996, 1999 and 2002 SUSENAS arrived on two CDs.

The following section presents information about the 1996, 1999 and 2002 SUSENAS. It covers general information about the SUSENAS, the time of survey, method of survey, sampling procedure, sample size and common definitions used by the SUSENAS.

4.1.4.5 The SUSENAS

General information

SUSENAS was (and still is) a yearly national socio-economic survey at household level, conducted by the National Central Agency for Statistics in Indonesia (CBS). It is designed to cover all provinces in Indonesia in order to give a national representation. The CBS sets out the main aim of the survey, that is, to provide data for monitoring and evaluating programmes of development in Indonesia.

Information from households used in this study was collected on a wide range of welfare aspects. This included education, health/nutrition, housing/environment, criminal, social culture activities, consumption and income, transportation and the perceptions of household heads towards their household's welfare.

The SUSENAS, used in this study, was a survey assisted by questionnaires. Prior to 1981, there was only one set of questionnaires. In 1981, topics in community welfare were added to the questionnaires, which made the coverage of questions wider and resulted in more constraints within the survey. Therefore, since 1981 the SUSENAS has offered two sets of questionnaires, called *core* and *module*.

The *core* questionnaire, used in this study, contained some basic information on demographic and household characteristics and general information on health, education, activity, housing facility and expenditure. This *core* questionnaire was undertaken every year during 1996, 1999 and 2002. The aim of the *core* questionnaire was to gather information and monitor any changes that may occur every year in Indonesian households.

On the other hand, the *module* questionnaire covered three different subjects:

- Expenditure and sources of income.
- Socio-culture, tourism and criminality.
- Health, nutrition, education and housing.

Information on these three different subjects in the *module* questionnaire was collected every three years. For example, expenditure and income were collected in the *first* year; household welfare, social culture, travel and criminality in the *second* year; and health, nutrition, education and housing in the *third* year. The *module* questionnaire was designed to provide information in more detail regarding households compared with the same topic in the *core* questionnaire.

The *module* questionnaire that focused on expenditure and income was divided into two sections: food and non-food. There were more than 200 food items listed in the food consumption section that fell into 15 classifications:

- Cereals (rice, corn and wheat)
- Tuber (cassava, potatoes and sago)
- Fish
- Meat (beef, mutton, buffalo, pork, poultry and meat products)
- Eggs and milk (including milk products)
- Vegetables
- Pulses
- Fruits
- Oil and fat
- Beverages
- Spices
- Prepared food and drinks
- Alcohol beverages
- Tobacco and betel
- Other types of food

In the non-food expenditure section, there were about 1 00 non-food items that were grouped into eight categories:

- Housing
- Goods and services
- Education
- Health
- Clothing and footwear
- Durable goods
- Tax and insurances
- Social activity

The SUSENAS, used in this study, received information relating to expenditure on food and non-food in terms of purchasing and gifts, but it excluded goods that were transferred to people outside households.

Both the *core* and the *module* questionnaire of the SUSENAS were ordered for this study. The *module* questionnaire, in particular, was the one that had information on expenditure and income.

Time of survey

The SUSENAS is an ongoing annual survey. It is carried out in January - February every year. Historically, the first survey began in 1963. Prior to 1980, the SUSENAS was conducted annually, except in 1983 and 1988. Due to limitation on budgets and manpower, the 1963 and 1967 SUSENAS covered only the island of Java. In 2002, due to the unfavourable security situation, the *module* questionnaire of expenditure and income was not carried out in the provinces of Aceh, Maluku and Papua. The *core* questionnaire, however, was still conducted in these provinces in 2002.

Method of survey

The SUSENAS, employed in this study, used a survey method of a face-to-face interview assisted by a questionnaire. There were two strategies employed in the interview process. The section on food consumption required respondents to record their food consumption over one week. A direct or face-to-face interview was conducted with respondents who were illiterate, whilst an indirect interview was conducted for those who were literate. Literate respondents recorded details of their food expenditure over one week by themselves. On the other hand, the section on non-food consumption implemented an interview for both illiterate and literate respondents.

Responses to questions of food expenditure were taken, based on expenditure during one week, prior to the time of the survey in terms of volume, value and nutritional content, whilst questions of non-food expenditure covered the whole year and one month prior to the time of survey.

The enumerators from the SUSENAS interviewed heads of households, husbands/wives of the household heads, or other household members that were familiar with questions asked. Questions for individuals were addressed to the respective individuals.

Sampling procedure

The SUSENAS, used in this study, implemented a multi-staged sampling procedure of the probability sampling type. A multi-stage sampling procedure draws samples from selected samples that have been drawn before and this continues until the final samples are identified (Bouma, 1996; Neuman & Kreuger, 2003; Bryman, 2004).

The SUSENAS employed the national population census, the inter-census population survey, or the former SUSENAS as its initial sampling frame. The national population census collects information from all households in Indonesia every ten years, whilst the inter-census population survey and the SUSENAS, respectively take information from randomly selected households every five years and every year. The 1996 SUSENAS used the 1995 inter-census population survey, the 1999 SUSENAS contained the 1996 SUSENAS list of respondents and the 2002 SUSENAS employed the 2000 population census. By using the national population census, the inter-census population survey or the former SUSENAS as its sampling frame, the SUSENAS employed the current list of households in Indonesia. Denscombe (1998, p.17) suggests that:

“...a sampling frame should ideally contain a complete and up-to-date list of all those that comprise the population for research.”

Samples were selected to statistically represent all households in the country. Both the *core* and the *module* questionnaire from the SUSENAS had three steps in the sampling procedure for selecting the household samples. In general, these steps were:

- from the list of population census areas, the *core* questionnaire selected a number of villages for each regency/municipality;
- from each village, the *core* questionnaire selected one group of households;
- from each group of households, a sample of 16 households was selected. These 16 households were called the *core* households.

The *module* questionnaire followed the three steps of the *core* questionnaire above, except the *module* questionnaire selected a number of villages, a group of households and the final 16 households from the list in the *core* questionnaire. The *module* questionnaire called the 16 selected households the *core-module* households. Therefore,

the *module* households also belonged to the *core* households. In addition, urban and rural samples were drawn separately.

Sample size

Prior to 1993, the sample size of the *core* and *module* SUSENAS varied from time to time, below 60,000 households. Since 1993, the sample size has increased up to more than 200,000 households. However, the sample of 200,000 households applied only for the *core* questionnaire, whilst the *module* questionnaire remained to have about 60,000 households.

The sample size of the SUSENAS above should be representative for households in Indonesia. Literatures suggest that a representative sample does not necessarily require a large sample size (Denscombe, 1998; Neuman & Kreuger, 2003). Principally, a small sample, with a good procedure of sampling and sampling frame is better than a large sample without a good procedure of sampling and sampling frame (Neuman & Kreuger, 2003). The SUSENAS employed a procedure of probability sampling with a multi-stage process. Therefore, it is reasonable to assume that the SUSENAS implemented a good procedure of sampling.

Common definitions used by the SUSENAS

This study employed terms and definitions used in the SUSENAS. These terms and definition were taken from the manual guidance for SUSENAS enumerators in 1996, 1999 and 2002.

Household

There are two types of household: common household and special household.

A *common household* is broadly defined as a person or a group of people who live together in a part or a whole house and share their food. Generally, a common household consists of a husband, a wife and several children. The following cases are also categorised as a common household:

- A person who lives in a boarding house but cooks his/her own food.

- One/two/more groups of people that live in separated houses. These people cook and share their food and the houses are located in the same area of sampling.
- A household receives food from another household. These two households are recorded as two different households.
- A person who looks after hostel/s or prison/s, lives in the hostel/s or prison/s with or without their family, but has their food separately from the hostel/s or prison/s.
- People who share a room or house but everyone cooks his/her own food; each of them is treated separately as a different household.

A special household is for:

- People who live in hostel/s, such as student accommodation, employee accommodation and military camps with food provided.
- People who live in an orphanage, prison, etc.
- People who live in a boarding house with more than 10 people.

The special households are not surveyed by the SUSENAS, but only documented.

Household head

A household head is a person or household member who takes the responsibility of fulfilling the household needs or a person or household member who is appointed to head a household. A household head who lives in a house which is different from the house of his/her family but who visits this household (his/her family) regularly within less than six months, is recorded as the household head of his/her family's house.

Member of household

People are members of a household if:

- They usually live in the house (They can be either present or absent during the survey).
- They have lived in the house for more than six months or have lived less than six months but have an intention to live in the house in the near future.
- People in a boarding house contain less than 10 people.

Notes:

- Members of a household that have been away for more than six months or have permanently moved out from the house are no longer recorded as members of that household.
- Maids or drivers that live in and eat food in the house are recorded as members of the household. However, for those who receive food from the household but do not live in the house or live in the house but do not receive food from the house, are not recorded as members of the household.

Marital status

A couple is referred as *married* if they are officially or unofficially married at the time of the survey conducted. The couple could live either together in the same house or separately in different houses.

Life-divorced people are people that are divorced but they have not yet remarried. A woman who has not been married but has a baby/s is considered a life-divorced person (*solo mother*).

A *died-divorced* person is a person whose wife/husband died and he/she has not yet remarried.

Education

Primary level – elementary school, junior high school (lower secondary school), and other types of education at the same level as elementary and junior high school.

Intermediate level – senior high school (upper secondary school) and other types of education at the same level as senior high school.

Advanced level – college, university and other types of education higher than senior high school.

Urban and rural area

An area is categorised as an *urban* area if it:

- has a population density of more than 5,000 people per square kilometre,

- has less than 25% of employment in the agricultural sector,
- has at least eight urban-related facilities available in the area, *e.g.* post office, bank, cinema, hospital and school.

An area that does not meet the characteristics above is named a *rural* area.

Expenditure of household

Expenditure per month is the sum of money spent by a household on food or non-food items for one month, excluding expenditure for home industry or for other people outside the household.

Food expenditure has 15 categories: cereals, tubers, meats, eggs-milk, fish, pulses, vegetables, fruits, fat-oil, spices, prepared food-drink, others, tobacco, beverages and alcohol. Non-food expenditure consists of eight (8) categories: housing, goods and services, education, health, clothing, durable goods, tax and insurances and social activity.

Income of household

Income of household per month is the sum of salary and earnings per year deducted by spending on gifts, aids, donations, transferred money, insurance premium, credit, etc., and then divided by 12 months.

Sources of income are:

- Salary/wage, either cash or in kind.
- Earnings from agricultural home businesses.
- Earnings from non-agricultural home businesses (*e.g.* businesses in industry, trade, transportation services and rental).
- Earnings from non-jobs and non-household businesses (*e.g.* bank interests, land rental, house rental, shares, pension and claim of insurances).
- Earnings from transfers (*e.g.* remittances, inheritance, gifts and aids).
- Earnings from other sources (*e.g.* golds shares, selling houses or land).

4.1.4.6 Issues of reliability and validity

Reliability and validity are important issues in all measurement of research (Bouma, 1996; Golafshani, 2003; Neuman & Kreuger, 2003; Bryman, 2004). Reliability is concerned about whether or not the instruments of research will produce consistent results under similar circumstances (Bouma, 1996; Neuman & Kreuger, 2003; Bryman, 2004). Reliability could mean “*dependability*” (Neuman & Kreuger, 2003) or has the idea of “*replicability or repeatability of results or observations*” (Golafshani, 2003, p.598). Reliability could be improved by increasing the sample size (Craigie, *et al.*, 2002).

This study attempted to increase the reliability by employing the SUSENAS, a national and large-scale survey in Indonesia. The *core* SUSENAS surveys over than 200,000 households and the *module* SUSENAS surveys more than 60,000 households. The SUSENAS respondents are randomly selected across regions and areas of living (urban-rural) in Indonesia. By using the SUSENAS, this study could expect that its sample size and data quality were valid and the numbers of households were representative of the Indonesian households.

Validity asks whether or not the research applies the correct measurement and whether or not the research measures what it intends to measure (Bouma, 1996; Neuman & Kreuger, 2003; Bryman, 2004).

The SUSENAS anticipate the issue of validity by providing training and a manual guidance for their enumerators before they go into the field to interview the respondents. The training and manual guidance advises the enumerators to visit more than once if required. The enumerators are also asked to explain the questions in order that respondents can answer the questions correctly. Misinterpretation regarding questions can then be eliminated by both respondents and enumerators. Therefore, this study could expect that the SUSENAS data would be of high quality.

4.2 Data analysis

This section demonstrates the data management and analytical techniques employed in this research.

4.2.1 Data management

The research used three data sets from the SUSENAS: 1996, 1999 and 2002. The data sets were checked on arrival. Dale, *et al.* (1988) suggest that data sets of research need to be checked to ensure the completeness and the correctness of the data before conducting any analysis. This is called “*the standard checks on data*” (Dale, *et al.*, 1988, p.135). These particular data sets were managed using the statistical software of the SAS[®] system V. 8.2.

Checking numbers of observations –Numbers of households were received for the *core* and the *module* data sets, respectively: 206,597 households and 60,374 households in 1996; 205,747 households and 61,374 households in 1999; and 212,646 households and 64,422 households in 2002. This number of households was consistent with the number of household commonly involved with the SUSENAS, which include about 200,000 households for the *core* questionnaire and a round 60,000 households for the *module* questionnaire.

Merging files – This study merged the *core* data sets and the *module* data sets of from similar years to obtain the final data sets that contained households with all the required information. This merging procedure was possible because the *module* households were derived from the *core* households. The command used in this merging process was *proc merge* in the SAS[®] system. The final data sets for analysis were 60,374 households in 1996, 61,374 households in 1999, and 64,422 households in 2002. For the statistical analysis, some variables showed different numbers of households, due to some missing values. These missing values did not affect the results of the data analysis because their percentages were relatively small, around 3-6 percent. The largest percentage of missing values was demonstrated by the education variable of household heads, which gave 12.6 percent.

Naming and labelling variables – The coded variables of the SUSENAS were named and labelled with words to give more meaning. Variables should have names rather than sequential characters (Dale, *et al.*, 1988).

Deriving variables – Calculations were taken to convert the variable of one-week food expenditure and one-year non-food expenditure into the variable of one-month food and non-food expenditure. This needed to be done because this study investigated the household expenditure in term of one-month purchasing.

After the data conversion above was finished, the data relating to expenditure and income was adjusted for inflation using the regional Consumer Price Index with 1996 as the base year (CBS, 2005). At this point, the data was ready for the statistical analysis. The SPSS V. 12.0.1 (Coakes & Steed, 1999; Santoso, 1999; Pallant, 2005) and the SAS[®] system V. 8.2 (SAS, 1982; 2005) were applied for this statistical analysis. The level of significant difference for the statistical analysis was set at 95 percent ($p < 0.05$).

4.2.2 Analytical technique

Scales of measurement or type of data determine techniques of statistical analysis (Flemming & Nellis, 1994; Denscombe, 1998; Schloss & Smith, 1999). There are four scales of measurement or types of data (Denscombe, 1998; Schloss & Smith, 1999), and they are:

Nominal – classifies, very simply, objects into categories without order. It is the lowest level of numerical data and does not allow basic arithmetic operations such as addition, subtraction, multiplication, and division.

Ordinal – assigns objects into specific categories in ordered and ranked relationships. This is the next higher level of data types.

Interval – is similar to ratio type, except the categories of the interval type are ranked on equal interval. The data can be compared and contrasted and it applies addition and subtraction. Therefore, it has the highest level of data type, similar to the ratio type.

Ratio – is similar to the interval type, except the scales of the ratio type could have zero point. It is the highest level of data type in terms of the capability to receive mathematical manipulation including addition, subtraction, multiplication and division.

This research involved two types of data: nominal and ratio. Areas of living (urban and rural), gender of household heads (man and woman), and education level of household heads belonged to the nominal type; whilst age of household heads, size of household, and income and expenditure belonged to the ratio type.

For the data analysis, three major procedural analytical steps were performed: univariate analysis, bivariate analysis and multivariate analysis. These three analyses are discussed below and the results are presented in the next chapter.

4.2.2.1 Univariate analysis

Univariate analysis, also called descriptive analysis employs single variable (Schloss & Smith, 1999). Descriptive analysis is a preliminary analysis (Dale, *et al.*, 1988). It is useful to provide a description of the data (Carlson & Thorne, 1997) or to profile the data (Denscombe, 1998).

The descriptive analysis works by summarising and describing data using tabular and graphical forms (tables, charts, and graphs), frequency, averages (mean, median, and mode) and variability (mean deviation, standard deviation, variance and coefficient variance) (Flemming & Nellis, 1994; Carlson & Thorne, 1997; Denscombe, 1998; Schloss & Smith, 1999; Neuman & Kreuger, 2003). Frequency, averages and variability mean that the data is analysed based on numerical value, whilst tabular and graphical forms analyse the data visually (Pallant, 2005)

This research implemented averages and frequency to explore, summarise and describe the data in order to build the description of the data. The statistical software of SPSS version 12.0.1 was applied to this descriptive analysis.

4.2.2.2 Bivariate analysis

Bivariate analysis involves two variables. This analysis determines relationships between the two variables (Denscombe, 1998; Neuman & Kreuger, 2003; Bryman, 2004). The common bivariate analysis are Contingency tables, Pearson's r , Spearman's ρ , Phi and Cramers's V , and Chi-square, T-test and Analysis of Variance (ANOVA) (Denscombe, 1998; Neuman & Kreuger, 2003; Bryman, 2004; Pallant, 2005).

Contingency tables are relatively similar to frequency tables. Instead of only having numbers, the contingency tables convert the numbers into percentages of the total number, so that makes "*the tables easier to interpret*" (Bryman, 2004, p.231).

Pearson's r and *Spearman's ρ* examine the strength of relationships between two continuous variables or one continuous variable and one dichotomous variable. The coefficient will lie between 0 (zero or no relationship) and 1 (a perfect relationship). The coefficient could have either positive or negative (Bryman, 2004). The main difference between both is that *Spearman's ρ* is the non-parametric alternative to *Pearson's r* (Pallant, 2005).

Chi-Square (χ^2) is used to explore the relationship between two categorical variables. This analysis works by comparing the frequency distributions of the two variables. Chi-square has an assumption that should be met. This is that the lowest expected frequency in any cell should be 5 or more (Bryman, 2004; Pallant, 2005). It is the most commonly used test for frequency data (Dorak, 2006).

Phi (ϕ) and *Cramer's V* analyse the relationship between variables using the same formula. Both work with dichotomous variables. However the Phi coefficient is appropriate for 2 X 2 tables of dichotomous variables, whilst the Cramer's V is most useful for larger tables of dichotomous variables. Both can be seen as a correction of the Chi-square (Dorak, 2006).

T-test compares differences in means between two groups. The dependent variable is continuous, whilst the independent variable is categorical (Schloss & Smith, 1999;

Pallant, 2005). T-test is the most frequently analysis used for comparing two groups (Schloss & Smith, 1999).

The analysis of variance (ANOVA) examines differences in mean between more than two groups of objects (Carlson & Thorne, 1997; Schloss & Smith, 1999; Pallant, 2005). It is called the analysis of variance because the differences in means between the different groups are tested by comparing the variability between the different groups with the variability within the different groups (Carlson & Thorne, 1997; Pallant, 2005). An F ratio (F test) represents the differences in means between the different groups. It is calculated from the variance between the groups divided by the variance within the groups. A large F ratio indicates that there is more variability between the groups than there is within each group. If the F test were significant, it would reject the null hypothesis stating that the population means are equal. However, this significant F test does not identify which groups are different. Further tests, called post-hoc tests, will show the differences among the groups. The independent variable of the ANOVA test should have different levels or categories, while the dependent variable of the ANOVA test is a continuous variable (Pallant, 2005). For single independent variable, it is called a one-way ANOVA (Carlson & Thorne, 1997; Schloss & Smith, 1999; Pallant, 2005).

To investigate the relationships between two nominal variables for frequency data, this study employed *Chi-square* (χ^2) tests. *Contingency tables* could not be applied because they do not measure the relationship between variables. *Pearson's r* test and *Spearman's rho* (ρ) test were not implemented because both requiring continuous variables. *Phi* (ϕ) test and *Cramer's V* test are similar to the chi-square test. However, both the *Phi* (ϕ) test and *Cramer's V* test were not performed because the chi-square is the most common test and because the *Phi* (ϕ) test is more appropriate for 2x2 tables, and the *Cramer's V* test is more applicable for larger tables. The SPSS V.12.01 was used in these chi-square tests.

The analysis of variance (ANOVA) was applied for this study rather than the T-test due to the fact that the ANOVA test works with more than two groups, whilst the T-test is applicable for only two groups. The ANOVA tests were performed in order to examine the differences in mean expenditure of Indonesian households between three different years (1996, 1999 and 2002). SPSS V. 12.0.1 was employed in this analysis.

Steps involved in reading the results of the ANOVA tests were as follows:

Firstly, the assumption of homogeneity population variances should not be violated. Levene's test shows whether or not the population variances are equal for each group. If the Levene's test for homogeneity of variances is significant ($p < 0.05$), it means the population variances for each group is unequal (not homogenous), or otherwise. In this study, Levene's test was significant ($p < 0.05$). Therefore, the population variances for each year (group) were unequal or the homogeneity assumption of population variances was violated in this study.

Secondly, it was necessary to test the null hypothesis stating that population means are equal. If the assumption of homogeneity population variances were met, the F test is used to reject or accept the null hypothesis. On the other hand, if the homogeneity assumption of population variances were not met, the Welch test or the Brown-Forsythe test is used to check the null hypothesis. The null hypothesis is rejected if the probability values of the F test, the Welch test or the Brown-Forsythe test are significant, or otherwise.

Since the assumption of homogeneity population variances was violated, this study could not use the F test. The Welch test was chosen to reject or accept the null hypothesis, rather than the Brown-Forsythe test, because the Welch test is more powerful and more conservative than the Brown-Forsythe test. Literature suggests that a more powerful and conservative test should be used to check the null hypothesis when dealing with a large sample size (Garson, 2005) and this study had taken a large sample size from the SUSENAS.

Overall, the probability values of the Welch tests, which were significant were 0.000 (or less than 0.05). This indicates that the null hypothesis was rejected or the population means were unequal. This also demonstrates that there is a significant difference among the mean expenditure for the three years (groups) investigated (1996, 1999 and 2002).

Thirdly, significant differences among the groups have to be determined. For this purpose, the ANOVA tests employed the post-hoc tests of multiple mean comparisons. When the homogeneity population variances are not met, SPSS provides four post-hoc tests. They are Games-Howell (GH), Tamhane, Dunnett T3, and Dunnett C. The GH

test, which is designed for unequal variances and unequal sample sizes, is a liberal test and works with a small sample size. The Tamhane test is a conservative test. The Dunnett T3 and the Dunnett C are recommended for cases in which maintaining strict control over the alpha significance level is essential (Garson, 2005).

In this research, the Tamhane test was selected to identify the significant differences in the household expenditure between the years (groups) due to the large sample size from the SUSENAS. A general principle of choosing the post-hoc test is: if the sample size is large and the variability is expected to increase, a more conservative test should be chosen. Otherwise, the likelihood of Type I errors will be substantial (Garson, 2005).

Some of the Tamhane results demonstrated significant differences among the years. However, the actual differences in the mean dependent variables of the years (groups) were relatively small. For example, the means of the pulses expenditure was 5,604 rupiah in 1996, 6,342 rupiah in 1999, and 5,795 rupiah in 2002 ((NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006). These significant results were most likely due to the fact that the sample of the SUSENAS was large. Pallant (2005) states that, in the case of large sample size, quite small differences could produce statistical significance, in which the implication of this significant difference could be of little practical importance. For those studies with this type of situation, Coakes and Steed (1999) suggest that interpretation should be careful drawn. Interpretation of the study results should also consider other factors, not merely the statistical significance (Pallant, 2005).

4.2.2.3 Multivariate analysis

Multivariate analysis requires more than two variables (Flemming & Nellis, 1994; Neuman & Kreuger, 2003; Bryman, 2004; Manly, 2005). There are various methods within the multivariate analysis such as factor analysis, canonical correlation, discriminant analysis, and cluster analysis (Johnson & Wichern, 1992; Everitt, 1993; Flemming & Nellis, 1994; Sharma, 1996; Manly, 2005; Munro, 2005).

Factor analysis is used to reduce the number of variables, from numerous inter-correlated variables into fewer dimensions, called factors. The degree of correlation between the initial raw score and the final factor score is called a *factor loading*. There

are two approaches to factor analysis: 'principal component analysis' and 'common factor analysis'. The former considers the total variance in the data, whilst the latter takes the common variance (Johnson & Wichern, 1992; Manly, 2005).

To assess the relationship between two sets of variables, canonical correlation can be implemented. One set of variables represent multiple independent variables, and the other set of variables serves as multiple dependent variables (Sharma, 1996; Manly, 2005).

Discriminant function analysis predicts memberships in two or more groups based on a set of explanatory variables. If there are only two groups of observations, the use of logistic regression is more appropriate (Munro, 2005).

Cluster analysis is a method of grouping objects with similar characteristics into classes. These similar characteristics are used as the criterion for grouping the objects. The objects that perform similar features are labelled using the same name (Everitt, 1993). The objects in the same classes are more similar rather than those in the different classes (clusters) (Rae, 1996; Manly, 2005). Cluster analysis is the most common technique for grouping objects (Hair, *et al.*, 1998). By grouping objects, the cluster analysis can reduce the number of objects into a smaller and manageable number, especially in a large data set (Everitt, 1993; Hair, *et al.*, 1998; Manly, 2005). Therefore, the profile of the objects can be made more efficient and convenient (Everitt, 1993; Hair, *et al.*, 1998).

A cluster analysis was performed in this study to develop different types of households in Indonesia, based on their expenditure. Cluster analysis was chosen because it could classify objects (the Indonesian households). Factor analysis is comparable to cluster analysis. However, factor analysis groups variables, whilst cluster analysis groups objects. Other multivariate analyses could not be used because they do not work on classifying objects.

The criterion to group Indonesian households was expenditure on food and non-food. The 15 categories of food expenditure in the SUSENAS were grouped into five categories, in order to reduce the number of criterion and to study the households with respect to their main nutrients. These five categories were carbohydrate (cereals and

tubers), protein (fish, eggs and milk, and pulses), fat (meat, fat-oil), fibre (vegetables and fruits), and other (spices, beverages, prepared food and drinks, tobacco, alcohol, and other). The criterion for grouping the households in the cluster analysis were carbohydrate, protein, fat, fibre, and other for *the food expenditure*; and housing, goods and services, education, health, clothing, durable goods, tax and insurances, and social activity for *the non-food expenditure*.

The procedure for the cluster analysis conducted in this research was as follows: Firstly, from two and up to twenty clusters were developed for each data set (1996, 1999 and 2002). The *fastclus* procedure of the SAS[®] system, with a clustering method of sequential threshold procedure, was applied for this analysis. The SAS[®] system incorporates the method of sequential threshold procedure, which is an example of a non-hierarchical clustering program that is particularly suitable for large data sets (Hair, *et al.*, 1998). As previously noted, the SUSENAS data used in this study was a large data set.

Secondly, the number of clusters to be formed for this study was determined. According to Hair, *et al.* (1998), there has been no standard procedure to determine the number of clusters to be formed. Researchers may choose the procedures that have been proposed in the literature, and then make their final decision by using a priori criteria, practical judgement, common sense and theoretical foundations.

This study used the *cluster cubic criterion* (CCC) to determine the number of clusters to be formed. The SAS software system provides the value of CCC in the output of the cluster analysis. The CCC has been a common procedure for selection (Hair, *et al.*, 1998). Besides the CCC, this study used practical judgment and common sense to make the final decision on the number of clusters to be formed. The practical judgement and common sense factor included the number of the households in the clusters, similarity in characteristics of households and the use of a manageable number of the clusters. The values of the CCC, produced from this cluster analysis are provided in the Appendix 6.

The number of clusters, determined by the cluster analysis for this study, was six clusters for each data set. Clusters with similar labels in different years corresponded to one another. For example, T1 of 1996 corresponded to T1 of 1999 and T1 of 2002, and

T2 of 1996 corresponded to T2 of 1999 and T2 of 2002. Therefore, there were six clusters or household types in Indonesia, based on their expenditure patterns, during the three years (1996, 1999 and 2002).

This study calculated the average expenditure of the six household types on different expenditure items during the three years. The six types of households demonstrated changes in their expenditure on food and non-food. However, the changes in expenditure of the six clusters were not analysed in this study, due to limitations in resources (particularly time). The six household types, with a description of their average expenditure on food and non-food and their socio-demographic characteristics, are presented in the next chapter. Details about their expenditure patterns and their socio-demographic characteristics for the three years are provided in the appendices (see Appendix 7, Appendix 8, Appendix 9 and Appendix 10).

After the data was analysed, the next step was data interpretation and discussion. This step provided the findings of the research and suggestions for future studies. The results of the data analysis will be interpreted in the next chapter. Discussion, based on the results and interpretation of the data, will be presented in the final chapter.

4.3 Challenges and limitations of the study

The study faced some challenges in conducting this research. The main challenge was the difficulty in conducting communication between the researcher and the officers of the National Agency for Statistics (CBS) who are responsible for the SUSENAS data. The researcher needed information such as data entry, data code and the terms and definitions of data used. Communication to obtain the information was relatively difficult to be conducted because the location of the study was in New Zealand, whilst the CBS is located in Indonesia. The constraints of this communication also involved with time differences between New Zealand and Indonesia and with limit on the means for communications, for example electronic mails, telephone and letters.

Limitations on this study included:

- The researcher and the data collectors were independent to one another. The researcher had no information regarding the nature of the data collection and

behaviours of the SUSENAS households, and also no control in the data quality. Therefore, the data analysis and interpretation of the results of the data analysis were mainly drawn based on numerical figures.

- This study involved a large sample sizes. The SUSENAS used more than 200,000 households for the *core* questionnaire and more than 60,000 households for the module questionnaire. Literature suggests that if the sample sizes are large enough, small differences in means can give significant results when running ANOVA tests (Garson, 2005). However, an implication of having small differences in the means and statistical significance may have little practical importance (Pallant, 2005). Therefore, Pallant (2005) suggests further taking into account other factors in drawing interpretation from the results of the study.
- The process of merging the *core* data sets and the *module* data sets reduced the number of households in the final data sets used for the analysis. Each *core* data set had about 200,000 households, while each *module* data set had around 60,000 households. Therefore, each final data set contained around 60,000 households, instead of 200,000 households. This merging process could decrease the reliability of the data used in this study.
- This study converted the data of expenditure. The conversion was from one-week data of food expenditure and one-year data of non-food expenditure into one-month data of food and non-food expenditure. This factor is a limitation of this research because the mean data taken from the final data sets analysed were different from the original data sets.

4.4 Summary

This chapter describes and discusses the process of research including the steps and activities undertaken in this study. Due to limitations in money and time, it was decided to employ secondary data of existing statistics. The analysis of using a secondary data is called a secondary analysis.

The existing statistics from the National Socio-Economic Survey (SUSENAS) in Indonesia was chosen due to the fact that this survey contains data needed by this study. Three data sets from the SUSENAS 1996, 1999 and 2002 were employed to represent the period before and after the Indonesian economic crisis in 1997. The 1996

SUSENAS covered the period pre crisis (before 1997), the 1999 SUSENAS captured the period post-crisis – initial adjustment (1998-2000) and the 2002 SUSENAS represented the period post-crisis – further adjustment (after 2001).

The data was managed and analysed using computer-based processing and a statistical method. Univariate, bivariate, and multivariate analysis were explored to find appropriate analytical technique for the data analysis. The univariate analysis using averages and frequency was conducted to explore and summarise data in order to provide a description of the data. One-way analysis of variance (ANOVA) between group test and chi-square test of bivariate analysis were chosen to examine the relationships between two variables (independent and dependent). The post-hoc test (Tamhane test) of the ANOVA test was undertaken to identify the significant differences in household expenditure between the years. Cluster analysis of multivariate analysis was carried out in order to develop a typology of the Indonesian households. The statistical software, SPSS V. 12.0.1 and the SAS[®] system V. 8.2 were applied to this research.

Chapter 5

RESULTS AND ANALYSIS

This chapter presents results of the data analysis, regarding the impact of the 1997 economic crisis on the economic welfare of households in Indonesia. This study examined changes in expenditure patterns of households before and after the economic crisis in 1997. The chapter is divided into five sections. The first section reviews the profile of Indonesian households, in terms of their socio-economic and demographic characteristics, in order to provide background information on the households. The second section investigates pattern changes, in total expenditure and total food and non-food expenditure of Indonesian households, before and after the Indonesian economic crisis in 1997. Changes in household expenditure patterns, in food and non-food items before and after the 1997 economic crisis, are examined in the third section. Three years were observed for this study: 1996, 1999 and 2002, respectively, to represent the pre-crisis period (before 1997), the post-crisis - initial adjustment period (1998-2000), and the post-crisis - further adjustment period (after 2001). The fourth section identifies the types of households in Indonesia, which were based on their expenditure on food and non-food items. A summary of the major findings of the study is presented in the final section.

Three major analytical techniques of data analysis were performed in this study: univariate, bivariate and multivariate analysis. Univariate analysis was employed to explore and summarise the data. Averages and frequency were applied to this descriptive analysis. Bivariate analysis were undertaken to examine the relationships between two variables (*e.g.* independent and dependent). Chi-square tests and one-way analysis of variance (ANOVA) between group tests were used to this bivariate analysis. A cluster analysis, which is a multivariate analysis, was used to develop a typology of households in Indonesia.

The results of the descriptive analysis showed that the data distribution of households was positively skewed. This positively skewed distribution indicated that the households were clustered at the low end (low values) with a long thin tail at the high end (high values). This distribution type may suggest that the majority of households in Indonesia were relatively poor.

The results of the chi-square (χ^2) tests showed that the assumption of the chi-square test was not violated. The chi-square test has an assumption that the lowest expected frequency in any cell should be 5 or more. The chi-square tests of this study produced 0 cells that had an expectation of a count less than 5. The results of these chi-square tests are provided in Appendix 1.

Some of the ANOVA tests demonstrated that the relationships between the independent and the dependent variables were significant. The Tamhane tests, included in the post-hoc tests comparing mean dependent variables, showed that some of the dependent variables did not give significant differences for all three years. In some cases, the actual differences in the mean dependent variables for the three years (1996, 1999 and 2002) in the ANOVA tests were relatively small. This could be due to the large sample size of the data sets. Therefore, the study considered not only the statistical significance, but also other factors for interpretation of the ANOVA tests' results. These ANOVA tests results are provided in the appendices (see Appendix 2, Appendix 3, Appendix 4 and Appendix 5).

The cluster analysis produced six types of households in Indonesia that were based on similarities in their expenditures for each data set. Household types, with similar labels in different years, corresponded to one another. The study calculated the average expenditure of the six household types, on their food and non-food expenditure items, during the three years (1996, 1999 and 2002). The six household types, with a description of their average expenditure and their general socio-demographic characteristics during the three years, are presented in this chapter. Appendices provide the results of the process of the cluster analysis and details about the six types of households, in terms of their expenditure and their household characteristics (see Appendix 6, Appendix 7, Appendix 8, Appendix 9 and Appendix 10).

5.1 Profile of the Indonesian households

The profile of Indonesian households consists of the key socio-economic and demographic characteristics of households and heads of households for the three years analysed (1996, 1999 and 2002). This profile was built in order to provide background information about Indonesian households.

5.1.1 Main socio-economic and demographic characteristics

5.1.1.1 Household income

Income is an essential factor when investigating and discussing expenditure. The term of income that was adopted in this study was *household income per month*. The monthly income of households was calculated from the sum of income received by the households from various sources, for one year divided by 12 months. Chapter 4, section 4.1.4.5 describes the different sources of household incomes in Indonesia that are documented in the surveys.

The results of the study revealed that Indonesian households demonstrated an increasing trend of income per month over the three years (1996, 1999 and 2002). The average monthly income of Indonesian households increased by 13 percent on average, from 336,729 rupiah in 1996 to 379,906 rupiah in 1999 and by 17 percent on average, from 379,906 rupiah in 1999 to 444,959 rupiah in 2002. Households had a higher monthly income, by 32 percent on average, in 2002 than in 1996 (Table 5.1).

Table 5.1 Average monthly income of households in Indonesia.

Hs. Charact.	1996		1999		2002		% change in mean		
	<i>n</i>	<i>mean*</i>	<i>n</i>	<i>mean*</i>	<i>n</i>	<i>mean*</i>	96-99	99-02	96-02
Income	56,655	336,729	58,496	379,906	64,422	444,959	13	17	32

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source: The SUSENAS (1996; 1999; 2002).

The results of the one-way ANOVA between group test showed that variation in the mean monthly income of Indonesian households was significantly different for the three years (1996, 1999 and 2002) [$F(2; 116307) = 610.629$; $p = 0.000$]. The Tamhane test, used in the post-hoc tests, suggested that significant differences in the mean

monthly incomes of households were exhibited between 1996 and 1999 ($p=0.000$), 1999 and 2002 ($p=0.000$) and 1996 and 2002 ($p=0.000$).

A number of factors that could cause the monthly incomes of households to increase statistically and significantly during 1996-2002 included:

- Increases in the formal minimum wage of workers. Since the early 1990s, the Indonesian government has paid more attention to the policy of the formal minimum wage. This policy has become an important part of government labour policies (ADB, 1998a; Suryahadi, *et al.*, 2003). The formal minimum wage has increased since the early 1990s (ADB, 1998a; 2000; Suryahadi, *et al.*, 2003; ADB, 2004a; CBS, 2005) (see Chapter 2, section 2.3.2.1).
- Due to depreciation of the rupiah against the US dollar, during the 1997 economic crisis, some agricultural households received more revenue. Hugo (2000) and Sunderlin, *et al.* (2000) observed that the prices for cash crops (*e.g.* black and white pepper, coffee, and cocoa) in the export market rose during the economic crisis. For example, the price indexes of these commodities increased from 100 to about 200 (or 100 percent increase) in December 1997, relative to the consumer price index of food in January 1997 (1996=100). The price indexes of these commodities continued to increase and they peaked in the middle of 1998 at more than 300 (or more than 200 percent increase) which was also relative to the January 1997 food consumer price index. Consequently, some agricultural households, especially farmers growing these cash crop commodities, had the chance to receive more revenues.
- Due to the 1997 economic crisis, the number of working people and working hours had increased. ADB (2001a) notes that, during the economic downturn, the number of people who went to work increased. Using a survey, conducted in 13 provinces of Indonesia in 2002, Mubyarto (2002) estimated that employment opportunities (paid and unpaid jobs) for men increased from 79 percent in 1997 to 84 percent in 2000 and for women it increased from 45 percent in 1997 to 57 percent in 2000. This meant that paid workers received a sum amount of payment, whilst the unpaid workers did not get paid (*e.g.* working for family businesses). Specifically, the paid jobs for men expanded from 75 percent in 1997 to 77 percent in 2000 and for women they went up from 37 percent in 1997 to 42 percent in 2000. This survey also observed that there were an additional 25

working hours per household and 10 working hours per individuals per week, during the economic crisis (Mubyarto, 2002). The survey results suggested that the 1997 economic crisis stimulated more people to work and extend their working hours. Consequently, these people received more income.

- Some of the Indonesian households sold or pawned their household assets which were particularly due to the 1997 economic crisis. From a survey of 13 provinces in Indonesia, Mubyarto (2002) observed that pawn houses and gold markets were very active during the economic crisis: about 4 times more active than before the crisis in 1997. Some Indonesian households sold or pawned their household assets, such as gold and valuable papers. The survey calculated that more than 25 percent (rural) and 40 percent (urban) of Indonesian households owned these kinds of assets (Mubyarto, 2002). By selling or pawning their household assets in the pawn houses or gold markets, some households in Indonesia increased their revenues.

5.1.1.2 Size of household

The size of a household is an important factor of demographic characteristics that affects decisions regarding household expenditure. In this study, the size of household was defined as the number of people living in a household. Classification on household members identified in the surveys is described in Chapter 4, section 4.1.4.5.

Table 5.2 demonstrates that the average number of people, for a household in Indonesia, slightly decreased during the period 1996-2002. It declined by 5.3 percent on average, from 4.36 people in 1996 to 4.13 people in 1999 and by 2.9 percent on average, from 4.13 people in 1999 to 4.01 people in 2002. Household size in 2002 (4.01 people) was smaller by 8.3 percent on average, relative to household size in 1996 (4.36 people).

Table 5.2 Average size of households in Indonesia.

Hs. Charact.	1996		1999		2002		% change in mean		
	<i>n</i>	<i>mean*</i>	<i>n</i>	<i>mean*</i>	<i>n</i>	<i>mean*</i>	96-99	99-02	96-02
Hs. size	56,655	4.36	58,496	4.13	64,422	4.01	5.3	2.9	8.3

Note : * estimated in people.

Source: The SUSENAS (1996; 1999; 2002).

The one-way ANOVA between group test justified that household size had significant differences of variation for the three years (1996, 1999, and 2002) [$F(2; 117868) = 561.689$; $p = 0.000$]. Comparisons in mean household size, between 1996 and 1999 ($p=0.000$), 1999 and 2002 ($p=0.000$), and 1996 and 2002 ($p=0.000$), demonstrated significant differences (Tamhane test).

The Indonesian national population census, that collects data from Indonesians every ten years, can be used as a comparable data to this study. This census estimates that the size of a household in Indonesia decreased from 4.9 people in 1980 to 4.5 people in 1990 and to 3.9 people in 2000 (CBS, 2001). Observing developed and developing countries, Bongaarts (2001) reports that the developed countries had declined household size from five people in the middle of the nineteenth century, to between two and three people in 1990. On the other hand, during 1990-1998 the size of a household in the developing countries was around 4.8 people in Latin America, 5.1 people in Asia, 5.3 people in Sub-Saharan Africa, and 5.6 people in the Near East/North Africa. Therefore, the size of Indonesian households during 1996-2002 could be viewed as below the average household size in the regions of developing countries.

CBS (2001) and FHI (2005a) argue that the size of households in Indonesia, which demonstrated a significantly declining trend, could be related to the national family planning program named the *planned household* (*Keluarga Berencana - KB*). This programme, which started in the 1970s, has promoted small families in Indonesia. Since its implementation, the programme has contributed to a declining fertility rate in Indonesian women, from 5.6 children per family during 1967-1970 to 2.85 children per family in 1994. Currently, families with small numbers of people such as three to four are common in Indonesia (FHI, 2005a) (see Chapter 2, section 2.1.3.4).

5.1.1.3 Area of living

The area of living is another demographic characteristic that characterises household decisions relating to expenditure. The characteristics of urban and rural areas, used in this study, are described in Chapter 4, section 4.1.4.5.

Urban and rural dwellers are different when making decisions regarding their expenditure. The differences are partly due to the fact that the urban dwellers have higher incomes, higher levels of education and more modern lifestyles (Purba, *et al.*, 1999; Kakwani & Krongkaew, 2000; Webb & Lapping, 2002).

The results of the survey demonstrated that the number of Indonesian households living in the urban areas gradually increased for the three years investigated (1996, 1999 and 2002). The percentage of Indonesian urban households was 40 percent in 1996, and it increased to 42 percent in 1999 and to 45 percent in 2002 (Table 5.3). Consequently, the percentage of Indonesian rural households demonstrated a reversed trend. Statistically, the Chi-square test demonstrated that the proportion of urban households and rural households differed significantly ($\chi^2 = 444.803$; $p = 0.000$) in 1996, 1999 and 2002.

Table 5.3 Distribution of living areas within households in Indonesia.

Household characteristics	1996		1999		2002	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Area of living						
• Urban	22,427	40	24,336	42	29,279	45
• Rural	34,234	60	34,164	58	35,143	55
<i>Total</i>	<i>56,661</i>	<i>100</i>	<i>58,500</i>	<i>100</i>	<i>64,422</i>	<i>100</i>

Source: The SUSENAS (1996; 1999; 2002).

For comparison, the Indonesian population census, which is conducted every ten years, calculates that the proportion of Indonesian people living in the urban areas increased from 30.6 percent in 1990 to 40.2 percent in 2000 (CBS, 2001). ADB (2003), an international institution, estimated that by 2003 Indonesia had 45.6 percent of urban population. With respect to population in the world, the population division of the United Nations (2004) also calculated that the population of urban people in the world has increased from 29.1 percent in 1950 to 48.3 percent in 2003 and was estimated to reach 60.8 percent by 2030. All regions of the world including Europe, Latin America and the Caribbean, Northern America and Oceania, excluding Africa and Asia, demonstrated that their urban population have increased more than 50 percent from 1950-2003. For Africa and Asia, respectively, the urban population was 15 percent and 17 percent in 1950 and 38.7 percent and 38.8 percent in 2003. Both Africa and Asia have been projected to reach more than 50 percent of urban population by 2030 (UN, 2004). Comparison between Indonesia and the Asian region showed that, by 2003,

Indonesia had a higher percentage of urban population than other countries in the Asian region.

During 1996-2002 in Indonesia, the proportion of urban households had increased or the proportion of rural households had decreased significantly (Table 5.3). This could be related to the trend of urbanisation that the country had faced since the 1970s (LOC, 1992). One of the factors for Indonesian urbanisation was the changing role of the economic sector in the Indonesian economy (Firman, 1996). It was estimated that the agricultural share in the economy was 19.4 percent in 1990 and declined to 16.6 percent in 2003, whilst the shares of the industrial and the services sector, respectively, were 39.1 percent and 41.5 percent in 1990 and 43.6 percent and 39.9 percent in 2003 (ADB, 2001b; 2004b). The fact that the industrial and the services sector had gained bigger shares in the Indonesian economy, over the agricultural sector, might have indicated that people, particularly from the rural areas, had been attracted and induced to move to the urban areas, where the industrial and the services sectors were generally located. Also these two sectors demanded labour (Ishida, *et al.*, 2003) and their infrastructures and facilities were more developed and attractive for people as a place of living (Warsono, 2005) (see Chapter 2, section 2.1.3.5).

5.1.2 Characteristics of household heads in Indonesia

The head of a household is the main contributor of income in that household, so he/she plays a key role in decision-making process of household expenditure (Kakwani & Krongkaew, 2000; Luo, *et al.*, 2001). Therefore, the household head is the most influential person in a family (Bhandari & Smith, 2000) and he/she is usually the person who distributes food within the household (Luo, *et al.*, 2001). Hence, it is necessary to discuss the characteristics of household heads.

Some of the most important characteristics of household heads, that could influence decision on expenditure, are age, gender, marital status and education (Frazao, 1993; Kinsey, 1994; Rae, 1999; Wodon, 2000; Liu & Chern, 2001; Agbola, 2003). In general, the results of the data analysis suggested that the distribution of characteristics, of Indonesian household heads, demonstrated little change over the three years observed (1996, 1999 and 2002).

Age

For the three years (1996, 1999 and 2002), the findings demonstrated that the average age of Indonesian household heads was relatively stable at around 45 years old (Table 5.4).

Table 5.4 Average age of household heads in Indonesia.

Characteristics of household heads	1996		1999		2002	
	<i>n</i>	<i>mean</i>	<i>n</i>	<i>mean</i>	<i>n</i>	<i>mean</i>
Age (years)	56,655	45	58,496	45	64,422	45

Source: The SUSENAS (1996; 1999; 2002).

Gender

Table 5.5 shows that males were dominant as household heads in Indonesia. Nearly 90 percent of Indonesian households had male-headed households, for the three years (1996, 1999 and 2002). The male-headed households showed little changes in that they decreased slightly from 88 percent in 1996 to 87 percent in 1999 and increased back to 88 percent in 2002 (Table 5.5).

Table 5.5 Distribution of gender of household heads in Indonesia.

Characteristics of household heads	1996		1999		2002	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
• Male	49,869	88	50,346	87	56,561	88
• Female	6,749	11	7,639	13	7,861	12
<i>Total</i>	<i>56,618</i>	<i>100</i>	<i>57,985</i>	<i>100</i>	<i>64,422</i>	<i>100</i>

Source: The SUSENAS (1996; 1999; 2002).

A previous study of four regions in developing countries (Bongaarts, 2001) could be used for a comparison. Bongaarts (2001) noted, that from 1990-1998, the majority of household heads in Asia, Latin America, Near East/North Africa and Sub-Saharan Africa were men. Nevertheless, the proportion of female-headed households in these four regions was relatively significant. From the smallest to the largest percentage, the female-headed households were 13 percent in the Near East/North Africa, 16 percent in Asia, 22 percent in Sub-Saharan Africa, and 24 percent in Latin America. Therefore, regarding households headed by females, their percentage in Indonesia was smaller than

that in countries in the Asian region, Sub-Saharan Africa, and Latin America, but it was relatively similar to the countries in the region of Near East/North Africa.

Marital status

This study used two types of marital status of household heads: married and single household heads. There were four types of marital status, of household heads, identified by the SUSENAS: married, life-divorced, died-divorced and single (see Chapter 4, section 4.1.4.5). In this research, the single household heads contained life-divorced, died-divorced and single household heads. These three types of marital status, of household heads, were combined together to increase the validity of the statistical results, because the percentages of these three types were small.

The results of the data analysis demonstrated that, in Indonesia married-head of households were dominant (more than 80 percent) compared with the single-head of households. From 1996 to 2002, the married-head of households showed little changes. The percentage of the married-head of households declined from 86 percent in 1996 to 83 percent in 1999 and rose to 84 percent in 2002 (Table 5.6).

Table 5.6 Distribution of marital status of household heads in Indonesia.

Characteristics of hs. heads	1996		1999		2002	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Marital status						
• Married	48,634	86	48,097	83	54,377	84
• Single	7,984	14	9,888	17	10,045	16
<i>Total</i>	<i>56,618</i>	<i>100</i>	<i>57,985</i>	<i>100</i>	<i>64,422</i>	<i>100</i>

Source: The SUSENAS (1996; 1999; 2002).

Households in Indonesia had a smaller percentage of married-head of households in 1999 compared to 1996 and 2002. This could be related to the Indonesian economic crisis in 1997. Literature suggests that the economic downturn may have decreased the number of married heads of households. Caldwell & Caldwell (1997) observed that, due to the Indonesian economic hardship in 1997, the cost of weddings had increased and the brides and the fathers of the future brides had become reluctant to pay for marriages. The 1997 economic crisis in Indonesia was also the cause of closures in some companies and this resulted in the laying-off of some workers (ADB, 1999). These laid-

off workers could have become frustrated with their life and this may have led to social problems, such as criminals, divorce, suicide, marriage disruptions and drugs (Pasaribu, 2002). The difficult economic condition of households was one of some causes for marriage disruption (Kompas, 2003). In comparison to this study, the data from the National Agency for Statistics in Indonesia (CBS, 2000) showed that the number of divorces in Indonesia increased by around 16 percent in 1998/1999, relative to 1997/1998. This figure from the CBS applied only to people registered as Moslems and there was no data available for other religions.

Education

This research employed three categories of educational level as outlined in the SUSENAS: primary, intermediate, and advanced level. Descriptions of these three levels of education are presented in Chapter 4, section 4.1.4.5.

The results of this research suggest that the household heads in Indonesia had become more educated. This was indicated by the fact that the percentage of household heads with primary education declined, whilst those with intermediate and advanced education increased (Table 5.7).

Table 5.7 Distribution of education of household heads in Indonesia.

Characteristics of hs. heads	1996		1999		2002	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Educational level						
• Primary	36,234	75	36,852	72	40,680	71
• Intermediate	9,057	19	10,264	20	12,198	21
• Advanced	3,066	6	3,810	8	4,774	8
<i>Total</i>	<i>48357</i>	<i>100</i>	<i>50,926</i>	<i>100</i>	<i>57,652</i>	<i>100</i>

Source: The SUSENAS (1996; 1999; 2002).

Table 5.7 shows that the percentage of Indonesian household heads that were educated at primary education level decreased from 75 percent in 1996 to 72 percent in 1999 and to 71 percent in 2002. On the other hand, those with intermediate education increased from 19 percent in 1996 to 20 percent in 1999 and to 21 percent in 2002 and those with advanced education rose 6 percent in 1996 to 8 percent in 1999 and 2002.

5.2 Patterns of total household expenditure

In an attempt to measure the level of buying capacity of households in Indonesia, before and after the economic crisis in 1997, changes in their total expenditure and percentage of total food and non-food expenditure patterns were analysed. This study observed three years: 1996, 1999 and 2002, respectively, to represent the period pre-crisis (before 1997), the period post-crisis – initial adjustment (1998-2000) and the period post-crisis – further adjustment (after 2001).

The results of the data analysis demonstrated that Indonesian households showed fluctuations in their total expenditure per month during the period 1996-2002. The average total expenditure spent per month declined from 308,999 rupiah in 1996 to 297,479 rupiah in 1999 and increased to 325,719 rupiah in 2002 (Table 5.8).

Table 5.8 Average household expenditure per month in Indonesia.

year n	1996		1999		2002		% change in mean		
	56,618		57,985		64,422				
	mean*	%	mean*	%	mean*	%	96-99	99-02	96-02
Total hs. exp.	308,999	100.0	297,479	100.0	325,719	100.0	3.7	9.5	5.4
• Food	170,773	55.3	182,243	61.3	183,442	56.3	6.7	0.6	7.4
• Non-food	138,226	44.7	115,236	38.7	142,277	43.7	-16.6	23.5	2.9

Note : *calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source : The SUSENAS (1996; 1999; 2002).

Variation in mean total expenditure of household per month, using the one-way ANOVA between group tests, showed significantly different [$F(2; 111734) = 43.042$; $p = 0.000$] for the three years (1996, 1999 and 2002). Further, the post-hoc test of mean comparison, using the Tamhane test, indicated that all comparisons for 1996-1999 ($p=0.001$), 1999-2002 ($p=0.000$) and 1996-2002 ($p=0.000$) showed significant differences in mean total expenditure.

The monthly total expenditure of Indonesian households decreased significantly by 3.7 percent in 1999 compared to 1996 and this could have been due to the economic crisis in 1997. Despite the Indonesian financial downturn in 1997, households increased their average income, because the real income of households could not support their expenditure. Their monthly income increased from 336,729 rupiah in 1996 to 379,906 rupiah in 1999 (Table 5.1). However, the economic crisis brought the rate of inflation

higher than the rate of the monthly income, during the same years (1996-1999). The inflation rate escalated from 7.9 percent in 1996 to 20.7 percent in 1999 (Table 2.8), whilst the monthly income of the households increased by 13 percent during 1996-1999 (Table 5.1). Consequently, the real monthly income of the households decreased.

Their total expenditure increased significantly by 9.5 percent in 2002 compared to 1999. This could be explained by the fact that the real income of households was able to support their expenditure. The monthly incomes of households increased by 17 percent from 379,906 rupiah in 1999 to 444,959 rupiah in 2002 (Table 5.1). For the same years, the inflation rate decreased from 20.7 percent in 1999 to 11.9 percent in 2002 (Table 2.8). The monthly income for households increased at a higher rate than the rate of inflation during 1999-2002. As a result, the real monthly incomes of households increased.

A comparison between the period before the economic crisis and the period post adjustment of the crisis showed that total expenditure per month of households was significantly higher by 5.4 percent in 2002 than in 1996 (Table 5.8). However, the inflation rate in 2002 was 11.9 percent and higher than 7.9 percent in 1996 (Table 2.8). Therefore, the real monthly incomes were lower and households were not able to cover their expenditure in 2002, relative to 1996.

Within the total expenditure, the percentage of total food expenditure increased from 55.3 percent in 1996 to 61.3 percent in 1999 and decreased to 56.3 percent in 2002. Consequently, the percentage of total non-food expenditure showed a reversed trend (Table 5.8). The one way ANOVA between group tests showed that variation in mean total food and total non-food expenditure were significantly different for the three years (1996, 1999 and 2002) [total food – $F(2; 179022) = 218.371$; $p = 0.000$; and total non-food – $F(2; 179022) = 61.782$; $p = 0.000$]. However, the post-hoc tests suggested that significant differences in mean total food and non-food expenditure were not exhibited in all comparisons of these years. Using the Tamhane tests, mean total food expenditure indicated that 1996-1999 ($p=0.000$) and 1996-2002 ($p=0.000$) showed significant differences, while 1999-2002 ($p=0.187$) did not show significant difference. On the other hand, the Tamhane tests demonstrated that the significant differences in mean

total non-food expenditure were shown by 1996-1999 ($p=0.000$) and 1999-2002 ($p=0.000$), but were not indicated by 1996-2002 ($p=0.097$).

The trend of the proportion of total food and total non-food expenditure, from 1996 to 2002, may indicate that households prioritised food expenditure and postponed non-food expenditure, particularly when they experienced a difficult economic situation, due to the economic crisis in 1997. The proportion of total food expenditure was increased and the proportion of total non-food expenditure was decreased, because food was perceived as necessity in household expenditure rather than non-food. Within total expenditure, food appeared to be quite inelastic, which indicates that food is a hardship or dominant component, relative to non-food (Fritsche, 1996; Erdogan, 1997; McGee & Scott, 2000; Said, 2000; Wong & Wong, 2004; ADB, 2004a).

5.3 Expenditure on food and non-food items

This study examined changes in the expenditure patterns, of households in Indonesia, on food and non-food items for three years (1996, 1999 and 2002). This is an attempt to understand further variability in expenditure on different food and non-food items. This study applied the classification of food and non-food items determined by the SUSENAS. The household expenditure on food included 15 items: cereals, tubers, meat, eggs-milk, fish, pulses, vegetables, fruits, fat-oil, spices, prepared food-drink, other foods, tobacco, beverages and alcohol; whilst non-food contained eight items: housing, goods-services, education, health, clothing-footwear, durable goods, tax-insurance and social activity.

5.3.1 Food items

The data analysis demonstrated that there was variability in household expenditure on food items in Indonesia for the three years investigated: 1996, 1999 and 2002. The one-way ANOVA between group tests demonstrated that variation in mean expenditure, of different food items, were significantly different for the three years (1996, 1999 and 2002). Some of the Tamhane tests, included in the post-hoc mean comparison tests, indicated that these significant differences were not exhibited by all the comparisons of the years (1996-1999, 1999-2002 and 1996-2002).

Table 5.9 Average household expenditure per month on food items in Indonesia.

	year n	1996		1999		2002	
		56,618		57,985		64,422	
		mean*	%	mean*	%	mean*	%
<i>Food expenditure</i>							
• Cereals		37,367	21.9	47,908	26.3	37,270	20.3
• Tubers		1,991	1.2	2,140	1.2	2,112	1.2
• Meat		10,409	6.1	6,901	3.8	9,522	5.2
• Eggs-milk		9,544	5.6	8,658	4.8	10,368	5.7
• Fish		15,935	9.3	16,808	9.2	16,813	9.2
• Pulses		5,604	3.3	6,342	3.5	5,795	3.2
• Vegetables		15,496	9.1	18,081	9.9	14,862	8.1
• Fruits		8,797	5.2	6,000	3.3	9,093	5.0
• Fat-oil		7,534	4.4	8,816	4.8	6,983	3.8
• Spices		4,263	2.5	4,638	2.5	4,819	2.6
• Prepared food-drink		25,978	15.2	27,496	15.1	31,729	17.3
• Others		4,151	2.4	3,902	2.1	4,345	2.4
• Tobacco		13,705	8.0	15,143	8.3	20,788	11.3
• Beverages		9,633	5.6	9,198	5.0	8,570	4.7
• Alcohol		368	0.2	212	0.1	371	0.2
<i>Total food</i>		<i>170,773</i>	<i>100.0</i>	<i>182,243</i>	<i>100.0</i>	<i>183,442</i>	<i>100.0</i>

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source: The SUSENAS (1996; 1999; 2002).

The findings demonstrated that cereals had the largest percentage (above 20 percent) of food expenditure per month, compared to the other food items, during the three years investigated. This could be explained by the fact that rice, as part of cereals (rice, corn and wheat powder), is the staple food for Indonesians. More than 90 percent of Indonesians eat rice (Rae, 1996; Khudori, 2005). From 1996 to 2002, the proportion of rice expenditure increased from 21.9 percent in 1996 to 26.3 percent in 1999 and decreased to 20.3 percent in 2002 (Table 5.9). Statistically, mean cereal expenditure showed significant differences for comparison 1996-1999 ($p=0.000$), but did not indicate significant differences for comparison 1999-2002 ($p=0.470$) and 1996-2002 ($p=0.810$) (Tamhane test). The cereal expenditure increase in 1999 could be due to the fact that households gave priority to staple foods in a situation where the purchasing power of households had declined. When the households were able to improve their economic capacity of buying in 2002, the proportion of cereal expenditure declined and it was relatively similar to 1996. This may suggest that their priority for expenditure in 1996 and 2002 altered generally and not only affected cereals.

Following cereals, the second largest percentage of monthly expenditure on food items was on prepared foods and drinks. The prepared food and drink expenditure included bread, snacks, fried food, mungbean porridge, mixed Indonesian salads (*gado-gado*),

fried rice (*nasi goreng*), rice steamed in banana leaves (*lontong*), goulash, meat ball noodle soups (*mie bakso*), cooked fish/chicken/meat, soft-drinks, packaged water, packaged tea drinks, fruit juices and healthy and energy drinks. These kinds of foods are common in Indonesia. In cities particularly, these food can be widely bought from street vendors, small food shops or stalls (Sanda, 2004). The mean expenditure of prepared foods and drinks exhibited significant differences for all comparisons of the years (1996-1999, $p=0.000$; 1999-2002, $p=0.000$; 1996-2002, $p=0.000$) (Tamhane test). However, the percentage of food expenditure on prepared food-drinks per month demonstrated a relatively stable trend during 1996-1999 and a little increase during 1999-2002 (Table 5.9). The stable percentage of prepared food and drink expenditure could be related to the difficult economic situation of households, after the economic crisis in 1997. Households prioritised spending on at-home foods and thus slowed down their spending on away-home foods. The proportion of expenditure on prepared food and drink that increased in 2002 could be related to rapid urbanisation, particularly in the cities of Indonesia (Mardhana & Joko, 2004) and the improved purchasing capacity of households after the economic crisis. Urban people would have been limited in their time for cooking and thus buying prepared foods and drinks could have been one of their options.

Expenditure on fish and vegetables were also demonstrated as being a large percentage of people's diet. This could be because fish is relatively abundant in Indonesian food markets and available at affordable prices for the majority of Indonesians (Suhartini, *et al.*, 2004). The percentage of fish expenditure per month was relatively stable (around 9.3-9.2 percent) during 1996-2002 (Table 5.9). Therefore, the 1997 economic crisis was shown to have had little effects on the amount of fish expenditure that was purchased by households. The percentage of monthly food expenditure on vegetables was also relatively stable from 1996 to 1999, but declined from 1999 to 2002 (Table 5.9). However, all comparisons of the years (1996-1999, $p=0.000$; 1999-2002, $p=0.000$; 1996-2002, $p=0.000$) showed significant differences in mean vegetable expenditure (Tamhane test). The stable proportion of vegetable expenditure, during 1996-1999, could be related to the unfavourable economic conditions of the households due to the economic crisis in 1997. The households maintained their proportion of vegetable expenditure, because the prices of vegetables were relatively less expensive, compared to other food items. Many households did not need to buy vegetables because they grew

them in their gardens. About 50 percent of Indonesian households are rural (CBS, 2001). Furthermore, the decline in the proportion of vegetable expenditure in 2002 could be related to the improved buying capacity of households in the similar year. Households could afford to buy relatively more expensive food items and thus they slowed down their expenditure on less expensive food items, including vegetables.

The shares of meat and fruits demonstrated fluctuations and significant differences during 1996-2002. The proportion of expenditures on these two food items declined from 1996 to 1999, but then increased in 2002. Meat expenditure dropped from 6.1 percent in 1996 to 3.8 percent in 1999 and rose to 5.2 percent in 2002, whilst fruit expenditure decreased from 5.2 percent in 1996 to 3.3 percent in 1999 and increased to 5.0 percent in 2002 (Table 5.9). Statistically, all comparisons of the years (1996-1999, $p=0.000$; 1999-2002, $p=0.000$; 1996-2002, $p=0.000$) exhibited significant differences in mean expenditures for meat and fruits (Tamhane test). The declined proportion of expenditure could be because the prices of these food items were relatively expensive, particularly during the Indonesian economic downturn in 1997. With respect to fruits, the Indonesian markets had been increasingly supplied by imported fruits. Consequently, their prices rose when the Indonesian economic crisis hit the markets in 1997 and the exchange rate was unfavourable since the rupiah had been devalued. The increased percentage of expenditure on these two food items in 2002 could be explained by the fact that households had improved their buying capacity for the similar year.

Table 5.10 shows that Indonesian people were smoking a great deal, as indicated by the large percentages of tobacco expenditure during 1996-2002. The percentage of expenditure on tobacco was 8.0 percent in 1996, increased to 8.3 percent in 1999 and to 11.3 percent in 2002 (Table 5.9). This increasing trend of tobacco expenditure may indicate that the 1997 economic crisis produced little impact on the smoking population of Indonesia. According to the Indonesian Ministry of Health (MH, 2004), Indonesia had the fourth growth rate of cigarette expenditure in the world, 54 percent during 1990-2001. The expenditure on tobacco demonstrated significant differences during 1996-1999 ($p=0.000$), 1999-2002 ($p=0.000$) and 1996-2002 ($p=0.000$).

In contrast, Indonesian people consumed little alcohol. The percentage of expenditure on alcohol per month was low and relatively stable during 1996-2002 (Table 5.9). This

could be explained by the fact that the majority of Indonesian people are Moslems, who do not consume alcohol.

For all other food items, tubers, pulses, fat-oil, spices, others and beverages, their shares in the diet were relatively small and stable during 1996-2002 (Table 5.9). This may indicate that the 1997 economic crisis had little effect on the percentage of expenditure on these food items, as observed from 1996 to 2002.

5.3.2 Non-food items

The results of the study showed that there was variability in household expenditure of non-food items in Indonesia for the three years examined: 1996, 1999 and 2002 (Table 5.10). The one way ANOVA between group tests demonstrated that variations in mean expenditure of non-food items were significantly different for the three years (1996, 1999 and 2002). Some of the Tamhane tests, of the post-hoc mean comparison tests, indicated that these significant differences were not exhibited by all the comparisons of the years (1996-1999, 1999-2002 and 1996-2002).

Table 5.10 Average household expenditure per month on non-food items in Indonesia.

	1996		1999		2002	
	<i>n</i>		<i>n</i>		<i>n</i>	
	<i>mean*</i>	%	<i>mean*</i>	%	<i>mean*</i>	%
<i>Non-food expenditure</i>						
• Housing	59,695	43.2	53,827	46.7	63,432	44.6
• Good services	20,933	15.1	19,807	17.2	26,133	18.4
• Education	8,976	6.5	6,609	5.7	8,499	6.0
• Health	5,217	3.8	4,742	4.1	6,906	4.9
• Clothing – footwear	16,381	11.9	14,750	12.8	16,030	11.3
• Durable goods	16,448	11.9	8,587	7.5	12,983	9.1
• Tax – insurance	4,269	3.1	2,460	2.1	2,830	2.0
• Social activity	6,308	4.6	4,453	3.9	5,464	3.8
<i>Total non-food</i>	<i>138,226</i>	<i>100.0</i>	<i>115,236</i>	<i>100.0</i>	<i>142,277</i>	<i>100.0</i>

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source: The SUSENAS (1996; 1999; 2002).

The results showed that households spent the largest percentage of their non-food budget on housing. Expenditure on housing included rental costs, electricity, water, telephone, gas and energy. The percentage of housing expenditure showed fluctuations from 1996 to 2002. It was 43.2 percent in 1996, increased to 46.7 percent in 1999, but decreased to 44.6 percent in 2002 (Table 5.10). Tamhane tests of ANOVA tests indicated that comparisons in mean housing expenditure exhibited significant

differences: 1996-1999 ($p=0.035$), 1999-2002 ($p=0.000$) and 1996-2002 ($p=0.009$). The increase of housing expenditure in 1999 could be because spending on housing was necessary for the households to exist and it was prioritised by them in comparison to the other non-food expenditure.

The next largest percentages of non-food expenditure, after housing, were on goods-services and clothing-footwear. Expenditure on goods-services included newspapers, magazines, petrol, transportation, vehicle maintenance, recreation, household maintenance and other household services. The proportion of goods-services expenditure demonstrated an increasing trend during 1996-2002. It increased from 15.1 percent to 17.2 percent in 1999 and to 18.4 percent in 2002 (Table 5.10). All comparisons of the years (1996-1999, $p=0.003$; 1999-2002, $p=0.000$; 1996-2002, $p=0.000$), using Tamhane tests, showed significant differences in mean goods-services expenditure. This could be because costs on some spending of goods-services had increased, due to the economic downturn in 1997. Furthermore, the costs also increased because the Indonesian government had gradually reduced public subsidies, such as those on petrol and electricity, as part of the recovery programme for the economic crisis (ADB, 2000). The percentage of expenditure on clothing-footwear was relatively stable from 1996 to 2002 (Table 5.10). This could be because expenditure on clothing-footwear was a necessity for the households. Sarlo (2001) lists clothing as basic necessities, together with food, shelter and health. Therefore, the 1997 economic crisis had little effect on the proportion of expenditure on clothing-footwear for households in Indonesia.

Expenditure on durable goods also showed a significant percentage (around 10 percent) on the non-food budget of Indonesian households. Spending on items such as furniture, household and kitchen appliances, jewellery and vehicles are examples of durable good expenditure. The percentage of durable good expenditure fluctuated from 11.9 percent in 1996, to 7.5 percent in 1999 and to 9.1 percent in 2002 (Table 5.10). The Tamhane test suggested that mean durable good expenditure showed significant differences (1996-1999, $p=0.000$; 1999-2002, $p=0.000$; and 1996-2002, $p=0.000$). Households demonstrated that, when they had an economic deterioration, due to the economic crisis in 1997, they reduced less essential expenditure including that on furniture, household and kitchen appliances, vehicles and jewellery.

For the two social indicators of education and health, the trends of both expenditures were different. From 1996 to 2002, the proportion of expenditure on education declined from 6.5 percent in 1996 to 5.7 percent in 1999, but then it was relatively stable at 6.0 percent in 2002 (Table 5.10). The Tamhane tests of the ANOVA tests indicated that 1996-1999 ($p=0.000$) and 1999-2002 ($p=0.000$) demonstrated significant differences, but 1996-2002 ($p=0.059$) did not demonstrate significant differences in mean education expenditure. The proportion of health expenditure demonstrated an increasing trend, from 3.8 percent in 1996 to 4.1 percent in 1999 and to 4.9 percent in 2002 (Table 5.10). All three comparisons of the years (1996-1999, $p=0.003$; 1999-2002, $p=0.000$; 1996-2002, $p=0.000$) showed significant differences in mean health expenditure. The decreased percentage of expenditure on education and the increased percentage on expenditure on health could be related to the cost of education and health services that increased, due to the economic crisis. Some households were not able to cover the rising costs of education and thus they reduced their education expenditure. Alternatively, since health services could have been considered an urgent expenditure (SMERU, 2000), some households needed to increase their health expenditure. On the other hand, in order to reduce the burden of the public budget, the Indonesian government had cut public expenditure on education (Jones, 2001) and on health services (Caldwell & Caldwell, 1997). The differences in the percentage patterns of expenditure, between education and health, may indicate that households prioritised expenditure on health, rather than education, since health is one of life's basic necessities.

Table 5.10 also demonstrates that the percentage of expenditure on tax-insurance and social activity was small and also relatively stable from 1996 to 2002. This may suggest that both expenditures on tax-insurance and social activity received little effect from the economic downturn in 1997.

5.4 Types of household in Indonesia

This study developed a typology of Indonesian households, in order to identify household types, based on similarities in their expenditure on food and non-food items. There were 13 expenditure variables of food and non-food used as criterion for clustering the households. They included carbohydrates, protein, lipid, fibre and other for *the food expenditure*; and housing, goods-services, education, health, clothing-

footwear, durable goods, tax-insurance and social activity for *the non-food expenditure*. For the purpose of this study, from the 15 categories of food expenditure in the SUSENAS data, the study created five categories of food expenditure, based on the main nutrients: carbohydrates (cereals and tubers), protein (eggs and milk, fish, and pulses), lipid (meat, and fat-oil), fibre (vegetables and fruits) and other (spices, beverages, prepared food and drinks, tobacco, alcohol and other). The reasons for creating the five food categories were to reduce the number of criterion that came from the food expenditure for the cluster analysis and to understand the household types in fulfilling their food requirements, based on the main nutrients.

Using the 1996, 1999 and 2002 SUSENAS data sets, the cluster analysis produced six types of households in Indonesia. The study describes the household types, based on the patterns of their average expenditure during the three years. Changes in expenditure patterns, of the six household types for the three years, were not analysed, due to limitation in resources (particularly time). The six household types, with a description of their average expenditure on food and non-food items and their general socio-demographic characteristics during 1996-2002, are identified below. The household types, together with details about their expenditure patterns and their household characteristics for the three years, are provided in the appendices (see Appendix 7, Appendix 8, Appendix 9 and Appendix 10).

The ‘very poor’ households (T1)

The first and largest cluster of household accounted for about 43,011 households (70 percent of the total sample). This cluster was labelled the ‘very poor’ household type (T1) because it had the lowest total expenditure per month (less than 200,000 rupiah) and spent the largest percentage of total expenditure on food (67 percent) and the smallest percentage of total expenditure on non-food (37 percent), compared to the other clusters (Table 5.11).

Table 5.11 Average household expenditure on food and non-food per month by household types in Indonesia, 1996-2002.

<i>Poor types</i>	<i>n</i>	'Very poor' (T1)		'Modestly poor' (T2)		'Somewhat poor' (T3)	
		43,011		13,406		2,454	
		<i>mean*</i>	%	<i>mean*</i>	%	<i>mean*</i>	%
<i>Total expenditure</i>		194,379	100	481,644	100	1,041,384	100
• Food		130,618	67	278,302	58	412,262	40
• Non-food		63,760	33	203,342	42	629,122	60
<i>Wealthy types</i>	<i>n</i>	'Somewhat wealthy' (T4)		'Modestly wealthy' (T5)		'Very wealthy' (T6)	
		254		28		22	
		<i>mean*</i>	%	<i>mean*</i>	%	<i>mean*</i>	%
<i>Total expenditure</i>		2,363,289	100	5,660,850	100	22,646,276	100
• Food		599,987	26	704,731	12	1,230,581	7
• Non-food		1,763,302	74	4,956,119	88	21,415,694	93

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source: The SUSENAS (1996; 1999; 2002).

The type of expenditure for the ‘very poor’ households can be termed as *basic* because basic food and non-food had the largest percentages in their expenditure, relative to the other household types. Basic necessities of expenditure include food, shelter, clothing and health (Sarlo, 2001). About 31 percent of total food requirements were obtained from carbohydrates, the major source of food energy. The remaining food requirements were fulfilled from other food items such as protein, lipids and others (including added-value products), in which their shares in the diet were smaller, compared to the other household types (Table 5.12). The percentages of expenditure on clothing-footwear and health were the largest, compared to the other household types. The shares of clothing-footwear and health respectively, were 16.7 percent and 5.2 percent. Their expenditure on housing was 44.3 percent, a larger share relative to the other two poor household types. For the rest of non-food items; goods-services, education, durable goods, tax-insurance and social activity; their shares were smaller, compared to the other household types (Table 5.13).

Households of the ‘very poor’ type (T1) can be found mostly in rural areas (70 percent). Their average household size was 3.9 people, or less than four people per household which was the smallest, compared to the other household types (Table 5.14). This smallest size of household could be explained by the fact that migration from rural to urban areas had increased and the health status of rural people was low. Low health status may indicate a high rate of mortality. Literature suggests that migration and mortality can decrease the size of households for rural people (Rafiq & Hailemariam, 1986).

Males appeared to dominate the head of households of T1 (85 percent). On the other hand, household heads who were females were 15 percent. This could suggest that the majority of female-headed households in Indonesia were very poor. Around 62 percent of the household heads had only primary education, the largest proportion compared with the other types of household. Since T1 was mainly constituted by rural households, farming (56 percent) was the major occupation for the household heads, followed by industry (23 percent), trading (10 percent) and service (8 percent) (Table 5.14).

Table 5.12 Average household expenditure on food items per month by household types in Indonesia, 1996-2002.

<i>Poor types</i>		‘Very poor’ (T1)		‘Modestly poor’ (T2)		‘Somewhat poor’ (T3)	
<i>n</i>		<i>43,011</i>		<i>13,406</i>		<i>2,454</i>	
		<i>mean*</i>	<i>%</i>	<i>mean*</i>	<i>%</i>	<i>mean*</i>	<i>%</i>
<i>Food expenditure</i>							
• Carbohydrates		39,882	31	49,978	18	51,387	13
• Protein		22,138	17	51,902	19	80,233	20
• Lipid		10,910	8	27,345	10	51,386	12
• Fibre		17,853	14	36,367	13	57,600	14
• Other		39,835	30	112,709	40	171,657	41
<i>Total food</i>		<i>130,618</i>	<i>100</i>	<i>278,302</i>	<i>100</i>	<i>412,262</i>	<i>100</i>
<i>Wealthy types</i>		‘Somewhat wealthy’ (T4)		‘Modestly wealthy’ (T5)		‘Very wealthy’ (T6)	
<i>n</i>		<i>254</i>		<i>28</i>		<i>22</i>	
		<i>mean*</i>	<i>%</i>	<i>mean*</i>	<i>%</i>	<i>mean*</i>	<i>%</i>
<i>Food expenditure</i>							
• Carbohydrates		56,457	10	55,506	9	66,235	7
• Protein		114,781	19	123,102	18	241,179	20
• Lipid		82,490	14	99,340	14	136,007	13
• Fibre		86,269	14	97,387	15	136,202	13
• Other		259,990	42	329,396	45	650,957	47
<i>Total food</i>		<i>599,987</i>	<i>100</i>	<i>704,731</i>	<i>100</i>	<i>1,230,581</i>	<i>100</i>

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source: The SUSENAS (1996; 1999; 2002).

Table 5.13 Average household expenditure on non-food items per month by household types in Indonesia, 1996-2002.

<i>Poor types</i>	<i>n</i>	‘Very poor’ (T1)		‘Modestly poor’ (T2)		‘Somewhat poor’ (T3)	
		43,011		13,406		2,454	
		<i>mean*</i>	%	<i>mean*</i>	%	<i>mean*</i>	%
<i>Non-food expenditure</i>							
• Housing		28,305	44.3	79,149	39.0	275,625	43.9
• Goods and services		9,310	14.6	36,651	18.1	133,612	20.7
• Education		3,416	5.3	13,833	6.8	48,527	7.7
• Health		3,321	5.2	9,007	4.4	24,845	3.9
• Clothing and footwear		10,601	16.7	24,901	12.6	44,929	7.3
• Durable goods		4,844	7.5	25,830	12.1	55,911	9.2
• Tax and insurance		1,192	1.9	4,915	2.4	19,390	3.1
• Social activity		2,772	4.4	9,056	4.5	26,284	4.2
<i>Total non-food</i>		63,760	100	203,342	100	629,122	100
<i>Wealthy types</i>	<i>n</i>	‘Somewhat wealthy’ (T4)		‘Modestly wealthy’ (T5)		‘Very wealthy’ (T6)	
		254		28		22	
		<i>mean*</i>	%	<i>mean*</i>	%	<i>mean*</i>	%
<i>Non-food expenditure</i>							
• Housing		976,469	56.3	3,130,560	55.1	18,680,127	82.6
• Goods and services		380,920	21.1	490,610	9.3	1,162,913	7.5
• Education		86,138	4.9.2	44,041	1.0	323,428	2.3
• Health		41,039	2.3	42,772	0.8	91,356	0.41
• Clothing and footwear		98,080	5.5	96,828	2.0	184,953	1.1
• Durable goods		78,337	4.1	903,258	27.4	253,815	1.2
• Tax and insurance		67,653	3.8	210,818	3.6	219,540	2.2
• Social activity		34,666	2.0	37,234	0.8	499,564	2.8
<i>Total non-food</i>		1,763,302	100	4,956,119	100	21,415,694	100

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006). Source: The SUSENAS (1996; 1999; 2002).

Table 5.14 Socio-demographic characteristics of household types in Indonesia, 1996-2002.

<i>Poor types</i>	<i>'Very poor' (T1)</i>		<i>'Modestly poor' (T2)</i>		<i>'Somewhat poor' (T3)</i>	
<i>n</i>	<i>43,011</i>		<i>13,406</i>		<i>2,454</i>	
Size of household (people)	3.9		4.9		5.2	
Age of hs. head (year)	45.1		44.1		47.7	
	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>
Gender of hs. Head						
• Male	36,703	85	12,468	93	2,217	90
• Female	6,308	15	938	7	237	10
Marital status of hs. Head						
• Married	35,412	82	12,065	90	2,168	88
• Single	7,599	18	1,341	10	286	12
Education of hs. Head						
• Primary	26,523	62	5,541	41	434	18
• Intermediate	8,459	20	5,720	43	1,153	47
• Advanced	1,147	3	1,609	12	826	34
Occupation of hs. Head						
• Farming	24,086	56	3,173	24	409	17
• Trade	4158	10	2,234	17	474	19
• Services	3298	8	2,547	19	524	21
• Industry	9,893	23	4,960	37	908	37
Area of living						
• Urban	13,047	30	9,295	69	2,315	94
• Rural	29,964	70	4,111	31	139	6

Table 5.14 Socio-demographic characteristics of household types in Indonesia, 1996-2002 (*cont.*).

<i>Wealthy types</i>	‘Somewhat wealthy’ (T4)		‘Modestly wealthy’ (T5)		‘Very wealthy’ (T6)	
<i>n</i>	254		28		22	
Size of household (people)	3.9		4.9		5.2	
Age of hs. head (year)	45.1		44.1		47.7	
	<i>count</i>	%	<i>count</i>	%	<i>count</i>	%
Gender of hs. Head						
• Male	224	88	25	91	20	93
• Female	30	12	3	9	2	7
Marital status of hs. Head						
• Married	219	86	24	84	20	91
• Single	35	14	4	16	2	9
Education of hs. Head						
• Primary	22	9	2	6	2	7
• Intermediate	95	37	10	36	2	11
• Advanced	137	54	16	59	18	80
Occupation of hs. Head						
• Farming	45	18	8	30	6	29
• Trade	56	22	4	16	4	18
• Services	46	18	8	27	3	15
• Industry	94	37	7	25	8	36
Area of living						
• Urban	250	98	25	90	22	98
• Rural	4	2	3	10	0	2

The ‘modestly poor’ households (T2)

The ‘modestly poor’ type was the second largest household type in Indonesia. It consisted of 13,589 households (22.5 percent of the total sample). These households spent the second lowest total expenditure per month (around 500,000 rupiah) and allocated the second largest percentage of their total expenditure on food (58 percent) and the second smallest percentage of total expenditure on non-food (42 percent), compared to the other types of households (Table 5.11).

T2 demonstrated a beginning *transitional* phase of household type. Firstly, the majority of households living in urban areas were 70 percent, which was contrary to the majority of households of T1 living rural areas which were 69 percent (Table 5.14). This might indicate that households of T2 performed as transition types of households from rural to urban.

Secondly, the average age of T2 household heads was 44 years, the youngest compared to the other household types (Table 5.14). This could be related to the fact that some of the young household heads had migrated from rural areas and they had begun living in urban areas. Migrants move when they were young, especially in their productive ages (Darwis, 2004).

Thirdly, the proportion of household heads in T2 who had primary and intermediate education was relatively similar, 41 percent and 43 percent, respectively. This may imply that the education level of the household heads had started to gradually increase. Fourthly, since households of T2 were mostly located in urban areas, the main occupation for their household heads was in the industrial sector (37 percent) which was different from the very poor type (T1) that had farming as the main occupation for their household heads. Household heads who were engaged in the farming sector were 24 percent, followed by in-services sector which was 19 percent and the trade sector which was 17 percent (Table 5.14).

Fifthly, households in T2 started to transform their expenditure from *basic* to *non-basic*. In their diet, they fulfilled their main food requirements, not only from carbohydrate-based foods, but also from protein-based foods, with relatively similar proportions. The shares of carbohydrates and protein, respectively, were 18 percent and 19 percent (Table

5.12). The shares of expenditure in other food items (lipids, fibre and other) were higher than T1 but smaller than the remaining household types (Table 5.12). In the non-food budget, expenditure on basic non-food items (*e.g.* housing, clothing-footwear and health) started to decline, whilst in non-basic non-food items (*e.g.* goods-services, education, tax-insurance and social activity) it started to increase. The proportion of expenditure in housing, clothing-footwear and health, respectively, was 39 percent, 12.6 percent and 4.4 percent which were lower shares than T1 but higher shares than T3; whilst in goods-services, education, tax-insurance and social activity, respectively, was 18.1 percent, 6.8 percent, 2.4 percent and 4.5 percent which were higher shares than T1 but lower shares than T3 (Table 5.13).

The ‘somewhat poor’ households (T3)

Around 2,454 households were clustered into the third largest Indonesian household type, the ‘somewhat poor’ households (4 percent of the total sample). This type had the third lowest of total expenditure per month (around 1,000,000 rupiah) and the third largest proportion of total expenditure allocated on food (40 percent) and the third smallest proportion of total expenditure allocated on non-food (60 percent), compared with other types of household (Table 5.11).

The gradual transformation, from *basic* to *non-basic* items, characterised the expenditure of the ‘somewhat poor’ type (T3). Following T2, their contribution of basic food (carbohydrates) decreased, whilst non-basic foods (*e.g.* protein, lipids and other) increased in their diet. The average share of carbohydrates was 13 percent, a lower share than T1 and T2; whilst the average shares of protein, other and lipids, respectively, were 20 percent, 41 percent and 12 percent which were higher shares than T1 and T2 (Table 5.12). Contribution of basic non-food (*e.g.* health and clothing-footwear) decreased, whilst that of non-basic non-food (*e.g.* goods-services, durable goods, education and tax-insurance) increased. The average shares of health and clothing-footwear, respectively, were 3.9 percent and 7.3 percent which were smaller shares than T1 and T2, whilst the average shares of goods-services, durable goods, education and tax-insurance, respectively, were 20.7 percent, 9.2 percent, 7.7 percent and 3.1 percent, which were higher shares than T1 and T2. The education percentage of T3 was the highest in all household types. The share of housing expenditure was 43.9 percent which was a higher share than T2 (Table 5.13).

The socio-demographic characteristics of T3 were as follows. About 90 percent were male-headed households. The average members were 5.2 people per household and the average age of household heads was around 48 years old. The household heads of T3 were more educated, compared to the other poor household types (T1 and T2), but less educated than the wealthy household types. The majority (94 percent) of the households lived in urban areas. Therefore, the main occupation for the household heads was in the industrial sector (37 percent), followed by service (21 percent), trading (19 percent), and farming (17 percent) (Table 5.14).

The ‘somewhat wealthy’ households (T4)

The ‘somewhat wealthy’ type included about 254 households (0.43 percent of the total sample). Their total expenditure was around 2,000,000 rupiah per month, this being the third highest; the percentage of total food expenditure was 26 percent, the third smallest; and the percentage of total non-food expenditure was 74 percent, which was the third largest, relative to the other household types (Table 5.11).

The gradual transformation in expenditure, proceeding from *basic* to *non-basic* was also demonstrated by households in T4. In their diets, the average share of carbohydrates (basic) was 10 percent, a lower share than T1, T2 and T3; the average shares of other and lipids (non-basic) respectively were 42 percent and 14 percent which were higher shares than T1, T2 and T3; whilst the share of protein (non-basic) was 19 percent, a relatively similar share with T2 and T3 (Table 5.12). In the non-food budget, the average shares of clothing-footwear and health (basic), respectively, were 5.5 percent and 2.3 percent which were smaller shares than T1, T2 and T3; whilst the shares of goods-services, durable goods and tax-insurance (non-basic), respectively, were 21.1 percent, 4.1 percent and 3.8 percent which were higher shares than T1, T2 and T3 (the poor household types). The share of goods and services was the highest, compared to the other household types. In addition, housing took the largest percentage of non-food budget (56.3 percent) (Table 5.13).

Almost all of the households (98 percent) in T4 lived in urban areas. The average size of the households was 3.9 people and the average age of the household heads was 45 years old. About 54 percent of the household heads had advanced education, which made them more educated than those in the poor types of households. The main occupation of

the household heads was in the industrial sector (37 percent), followed by trading (22 percent), service (18 percent) and farming (18 percent) (Table 5.14).

The ‘modestly wealthy’ household (T5)

The ‘modestly wealthy’ type was the second smallest household type with around 28 households (0.05 percent). The total expenditure of the ‘modestly wealthy’ households was about 5,500,000 rupiah per month which was only lower than the ‘very wealthy’ households. Food expenditure was only 12 percent, the second smallest and non-food expenditure was 88 percent, the second largest, compared to the other household types (Table 5.11).

The ‘modestly wealthy’ type showed an expenditure type of *high non-basic* items. Households in T5 had expenditure in lipids and fibre (non-basic), of 14 percent and 15 percent, respectively, which were the largest shares, compared to the other household types. Lipids and fibre were demonstrated as being significant in their diet. The basic carbohydrates foods contributed only 9 percent, the second lowest after T6. For other food items, protein and other (non-basic), their shares, respectively were 18 percent and 45 percent which were only lower than T6 (Table 5.12). Expenditure in durable goods (non-basic) exhibited a significant share (27.4 percent) in the non-food budget. This durable percentage was the largest, compared to the other household types. Expenditure in basic non-food items (*e.g.* health and clothing-footwear) was lower than T4 but higher than T6. The housing expenditure consumed the largest percentage of the non-food budget of T5 (55.1 percent) (Table 5.13).

Households in T5 were mostly located in urban areas (90 percent). The education level of household heads was advanced (59 percent), intermediate (36 percent) and primary (6 percent). These household heads were just slightly less educated than household heads in T6. Interestingly, farming (30 percent) was demonstrated to be the main occupation for the household heads, followed by services (27 percent), industry (25 percent) and trade (16 percent) (Table 5.14). These shares in main occupations may suggest that at least some of the household heads were succeeding farmers.

The ‘very wealthy’ households (T6)

The ‘very wealthy’ type was the smallest cluster, only 22 households (0.04 percent of total sample). In contrast, it registered the highest total expenditure per month (around 22,000,000 rupiah) with the smallest percentage of expenditure per month on food (7 percent) and the largest percentage of expenditure per month on non-food (93 percent), compared to the other household types (Table 5.11).

Expenditure that contains *high non-basic* was also demonstrated by the ‘very wealthy’ households (T6). Expenditure in protein and other (including added-value products) appeared to be significant in the diet. The shares of protein and other (non-basic), respectively, were 20 percent and 47 percent, the largest compared with other types of households. T6 also exhibited a non-basic diet with the lowest reliance on carbohydrates of all the household types which was only 7 percent (Table 5.12). In the non-food budget, T6 showed that their expenditure in housing was significant (82.6 percent), with all other non-food items making a minor percentage of total non-food budgets. This housing percentage was the largest, compared the other types of households. On the other hand, their percentages of the rest of non-food expenditure were the smallest, relative to the other household types (Table 5.13).

The majority of households of the ‘very wealthy’ type (T6) lived in urban areas (98 percent). There were 5.2 people per household, the largest size of household in all household types. This could be because health facilities in urban areas were better than in rural areas, and thus the mortality level of the T6 households could be expected to be low (Table 5.14).

T6 had the oldest household heads, 48 years old, relative to the other household types. This may imply that older household heads would have had longer working years and thus they would have higher incomes than younger household heads. The household heads in T6 were the most educated people, compared to the other types of households. About 80 percent of the household heads had advanced education. The main occupation of the household heads was in the industrial sector (36 percent), followed by farming (29 percent), trade (18 percent) and services (15 percent) (Table 5.14).

Therefore, identification of Indonesian households, based on similarities in their expenditure on different food and non-food items, resulted in six household types. From T1 through to T6, they demonstrated that their total expenditure increased, the percentage of total food expenditure decreased and the percentage of total non-food expenditure increased. They also showed that their expenditure moved from basic through to non-basic.

5.5 Summary

In the mid-1997, Indonesia was hit by an economic crisis. This study investigated changes in expenditure, in order to examine the impact of the 1997 economic crisis on the economic welfare of households in Indonesia, with regard to their buying capacity. Three years were observed: 1996, 1999 and 2002, respectively, to represent the period pre-crisis (before 1997), the period of initial adjustment - post crisis (1998-2000) and the period of further adjustment - post crisis (after 2001).

Investigation into the socio-demographic characteristics of households may suggest that, during 1996-2002, households in Indonesia were characterised by the:

- trend of increased average household income per month,
- declining trend of average household size,
- trend of increased percentages of urban households,
- heads of the households that were dominated by the ages 44-45 years old, male (90 percent), married (80 percent) who had a primary level of education (70 percent).

The results demonstrate that the average total expenditure of Indonesian households, per month, declined by 3.7 percent between 1996 and 1999 and increased by 9.5 percent between 1999 and 2002. The average total expenditure in 2002 was 5.4 percent higher than that in 1996. During 1996-2002, the 1997 economic crisis negatively affected changes in the total expenditure of Indonesian households.

With respect to total food and non-food, households increased their percentage of total food expenditure, or decreased the proportion of total non-food expenditure, particularly when households experienced a difficult economic situation. Food was prioritised,

rather than non-food, because food was a major component in total household expenditure.

Changes in the percentage of expenditure on different food and non-food items, during 1996-2002, may suggest that when Indonesian households experienced a difficult economic situation, they prioritised their expenditure on cereals, housing, goods-services and health and slowed their expenditure on meats, fruits, prepared foods-drinks, education and durable goods. For the remainder of food and non-food items, their percentages of expenditure were relatively stable.

The attempt to build a typology of households Indonesia, based on similarities in their expenditure of different food and non-food items, demonstrated that there were six household types identified. These six household types showed different stages of expenditure patterns. The first household type (T1) represented the largest total sample (70 percent) and was identified as the 'very poor' households. T1 showed a *basic* type of expenditure. Expenditure of carbohydrates-based foods (basic food) in the diet and expenditure of housing, health and clothing-footwear (basic non-food) characterised this basic type of expenditure. On the other hand, the sixth household type (T6) accounted for the smallest total sample (only 0.04 percent) and was labelled as the 'very wealthy' households. Households of the 'very wealthy' type demonstrated a *high non-basic* type of expenditure, in which more non-basic and added-value products were purchased. Households of the 'somewhat wealthy' type (T5) also performed at a high non-basic type of expenditure, but had a lower total expenditure than T6. The other household types, T2, T3 and T4, showed a type of *transitional* expenditure from basic to non-basic, within which basic expenditure (*e.g.* carbohydrates, health and clothing-footwear) declined, whilst non-basic expenditure (*e.g.* protein, lipids, fibre, other, goods-services, education and durable goods) increased

Chapter 6

DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

This study investigated the impact of the economic crisis in 1997 on the economic welfare of households in Indonesia, with regard to their expenditure patterns before and after the economic crisis. Three years were observed: 1996, 1999 and 2002 because these three years could represent the period before the economic crisis (before 1997), the period post-crisis – initial adjustment (1998-2000) and the period post-crisis – further adjustment (after 2001). This final chapter is structured in three sections. Firstly, it discusses the main findings from the study and this is followed by recommendations for future research. Finally, it draws general conclusions from the research.

6.1 Discussion on the major findings

6.1.1 *Main characteristics of households in Indonesia*

This study investigated the social characteristics of households in Indonesia for three years (1996, 1999 and 2002), as an attempt to provide background information about Indonesian households. The literature review suggests recognising the social aspect of consumers, in order to understand the way consumers behave. This social aspect includes household socio-economic and demographic characteristics, such as income, household size, areas of living and some key characteristics of household heads (Hazell & Roell, 1983; Wodon, 2000; Liu & Chern, 2001; Agbola, 2003; Beneito, 2003; Ferrer-i-Carbonell & Van Den Bergh, 2004).

Despite the economic crisis in 1997, Indonesian households increased their average income per month during 1996-2002 (Table 5.1). Some factors that might have caused this trend of increased income are: the policy of formal minimum wage that had gradually increased the minimum wage for workers in the formal sectors (ADB, 1998a; 2000; 2004a; CBS, 2005); the depreciation of the rupiah against the US dollar during

the Indonesian economic crisis in 1997 (Sunderlin, *et al.*, 2000); the number of working people and working hours; and the activity of pawn houses and gold markets which had increased, due to the 1997 economic crisis (ADB, 2001a; Mubyarto, 2002).

This study observed that, from 1996 to 2002, the rate of inflation increased from 7.9 percent in 1996 to 20.7 percent in 1999 and declined to 11.9 percent in 2002 (Table 2.8). These changes in the inflation rate during 1996-2002 were due to the effect of the economic crisis in 1997. The inflation rate factor is important when employing household income to analyse the expenditure of households. This analysis was to determine the purchasing power of households during 1996-2002. Moeis (2003) suggests that the inflation rate factor should be taken into account when the incomes of households are used to examine the economic welfare of households.

The effects of the inflation rate on household income, from 1996 to 2002, can be viewed as follows. The 1997 economic crisis pushed the inflation rate to escalate at a higher rate than the rate of the monthly household income. Consequently, the real household income decreased in 1999, relative to 1996. On the other hand, the Indonesian economy, that had shown a recovery from the economic crisis in 1997, reduced the inflation rate below the rate of household income. Consequently, the real income of households increased in 2002, compared to 1999. In addition, the rate of inflation was higher in 2002 than in 1996. Therefore, the real household income was lower in 2002 than in 1996. The same result was also reported by a study done in Mexico, where the Peso crisis in 1995 made the real wages of the people of the country decline during their economic downturn (Attanasio & Szekely, 2004).

The size of households in Indonesia showed a declining trend during the periods 1996-2002 (Table 5.2). The major factor for this decline was the national family planning program that had been implemented since the 1970s (CBS, 2001; FHI, 2005a). These results are supported by Bongaarts (2001) and CBS (2001). CBS (2001), the national statistics office of Indonesia, reported that household size in Indonesia had decreased between 1980 and 2000. Bongaarts (2001) also reported that both developed and developing countries had experienced a declining trend in household size.

The results also revealed that the percentage of Indonesian households living in urban areas increased for the three years: 1996, 1999 and 2002 (Table 5.3). This trend of urbanisation could be viewed from the bigger contribution held by the industrial and service sectors over the agricultural sector in the Indonesian economy (Firman, 1996; ADB, 2001b; 2004b). Ishida, *et al.* (2003) argue that urban areas, where industrial and service sectors are generally developed, would attract rural people to come and work in those areas. Warsono (2005) adds that, because infrastructures are more developed, urban areas are more attractive for people to live (Warsono, 2005). An Indonesian population census (CBS, 2001) and an international institution (ADB, 2003) also estimated an increasing trend of urbanisation in Indonesia. Urbanisation is a trend, not only in Indonesia, but also all over the world (Africa, Asia, Europe, Latin America and the Caribbean, North America and Oceania) (UN, 2004).

During the periods 1996-2002, the characteristics of household heads in Indonesia, which included age, gender, marital status and education, demonstrated little changes. Over the three years observed 1996, 1999 and 2002, the household heads were 44 years old, males (87 percent), married (85 percent), and with a primary level of education (70 percent) (Table 5.4, Table 5.5, Table 5.6, Table 5.7). In 1999, or nearly two years after the economic crisis in 1997, the Indonesian economy began to show some signs of recovery. Therefore, the crisis can only be viewed as too short to have any significant effect on changes in the characteristics of household heads. With respect to marital status, literature suggests that the 1997 economic crisis might have decreased the number of married people in Indonesia. Due to the 1997 economic crisis, the cost of a wedding increased and some couples delayed getting married (Caldwell & Caldwell, 1997). The economic crisis also caused some companies to lay-off their workers (ADB, 1998a). Moreover, these laid-off workers may have lead to social problems, such as marriage disruption, crimes, divorces, suicide and drugs (Pasaribu, 2002).

6.1.2 Patterns of household expenditure in Indonesia

6.1.2.1 Total household expenditure

This study measured the buying capacity level of households in Indonesia, by investigating changes in their expenditure patterns for the three years examined: 1996, 1999 and 2002.

The results showed that households in Indonesia demonstrated changes in their total expenditure and percentage of total food and non-food expenditure during the period 1996-2002. Changes in total expenditure may suggest that Indonesian households experienced a declined purchasing power in 1999, relative to 1996 and 2002. This could be related to the difficult economic situation of the households, immediately after the economic crisis in 1997. Due to the economic crisis, the real income of households decreased. Improvement in the Indonesian economy during the period of further adjustment of post crisis (after 2001) resulted in an increase in the real income of households. Therefore, households, as represented by the 2002 household data, could improve their capability to buy goods and services. However, further analysis on the improvement of Indonesian economy in 2002 demonstrated that households still needed more time to reach their higher level of buying as it stood in 1996. Changes in the country's economic development that were reflected in changes in the expenditure of the country's households, viewed as their purchasing power, was also reported by Widjajanti & Li (1996) and Beegle, *et al.* (1999) from Indonesia, Ishida, *et al.* (2003) from Malaysia, McKenzie (2001) from Mexico and Wong & Wong (2004) from Hong Kong.

Changes in the percentage of total food and total non-food expenditure, from 1996 to 2002, suggested that food was a necessity, compared to non-food. Households in Mexico also demonstrated the same decisions, regarding their expenditure on food and non-food, when they experienced the Peso crisis in 1995 (McKenzie, 2001). The percentage trend of total food and total non-food expenditure, during 1996-2002, was consistent with Engel's law, a known theory about food consumption. This law states that, as income increases the proportion of food, expenditure decreases (Kinsey, 1994; Gibson, 2002; Gan & Vernon, 2003). Consequently, Engel's law infers that non-food expenditure is an increasing function of income (Haq & Bhatti, 2001). The findings showed that the real monthly income of the Indonesian households decreased during 1996-1999 and then increased during 1999-2002. In addition, the real monthly income was lower in 2002 than in 1996.

During 1996-2002 the percentage of total food expenditure of Indonesian households was more than 50 percent and the total spent on non-food was less than 50 percent. Therefore, referring to Engel's law, the majority of Indonesian households could be

considered relatively poor. This result was similar to the results of studies in Malaysia and Nigeria (Hazell & Roell, 1983), Egypt and Ghana (Webb & Lapping, 2002), Senegal and Sudan (Delgado, *et al.*, 1998) and Nepal (Kayastha, 1999).

6.1.2.2 Expenditure on food and non-food items

Variability in household expenditure, on different food and non-food items, was studied during the period 1996-2002.

The main findings showed that cereals, vegetables, prepared foods and drinks, meats and fruits showed as significant percentages in the food expenditure of Indonesian households and they demonstrated fluctuations from 1996 to 2002. Changes in percentages of expenditure on cereals and vegetables may indicate that both food items were considered as necessities for households in Indonesia. Cereals were necessity items probably because rice, as a part of cereals, is a staple food for the majority of Indonesians. Cereals were also necessity items for Malaysian households (Ishida, *et al.*, 2003). On the other hand, vegetables, seen as necessity items in this study, contradicted a study by Ishida, *et al.* (2003) and Luo, *et al.* (2001). They reported that in Malaysia (Ishida, *et al.*, 2003) and China (Luo, *et al.*, 2001) expenditure on vegetables increased as income increased. This could be because of the different kinds of vegetables investigated in these studies or because households in Indonesia were self-sufficient in vegetables.

The percentage of expenditure on prepared foods and drinks decreased during 1996-2002. This was possibly because households delayed buying away-home foods and prioritised at-home food, due to their economic condition declined. The results of this study were similar to the results of earlier studies in Mexico (McKenzie, 2001) and in Malaysia (Ishida, *et al.*, 2003). Households in Mexico and Malaysia also gave priority to their at-home food and reduced their away-home food, when their purchasing power deteriorated, which was also due to an economic crisis in their countries.

Expenditure on the relatively more expensive food items, such as meats and fruits, was reduced when households experienced a declined buying capacity in 1999, compared to

1996 and 2002. Fritsche (1996), Ishida, *et al.*, (2003) and Luo, *et al.*, (2001) support the fact that meats and fruits are considered as luxury food items.

The results revealed that consumption of alcohol in Indonesia was low. This can be explained by the fact that the majority of Indonesians are Moslem. In Malaysia, where the majority of the people are Moslem, their consumption of alcohol was also low (Ishida, *et al.*, 2003).

Housing, followed by goods-services, clothing-footwear and durable goods, had the largest percentages of expenditure on household non-food budget in Indonesia, during 1996-2002. When households declined their purchasing power in 1999, relative to 1996 and 2002, the percentages of expenditure on housing, goods and services and clothing and footwear increased, whilst in durable goods it decreased. For all other non-food items, the percentage of health expenditure increased, whilst the rest declined in 1999. Changes in the percentages of expenditure on housing, goods and services, clothing and footwear and health, during 1996-2002, may suggest that these non-food items were considered as necessities for Indonesian households. These findings are supported by Sarlo (2001). He suggests that the basic necessities include food, shelter, clothing and health care.

6.1.3 Typology of Indonesian households

The aim of building a typology of households in this study is to identify household types based on similarities in their expenditure patterns in Indonesia. Calculations on their total expenditure and percentage of total food and non-food expenditure allowed this study to give them labels: the 'very poor' households (T1), the 'modestly poor' households (T2) and the 'somewhat poor' households (T3) for the *poor* types; and the 'somewhat wealthy' households (T4), the 'modestly wealthy' households (T5) and the 'very wealthy' households (T6) for the *wealthy* types.

Total household expenditure decreased from the 'very poor' type (T1) through to the 'very wealthy' type (T6). On the other hand, the percentage of total food expenditure or the percentage of total non-food expenditure increased from T1 through to T6. These percentages of total food and total non-food, in the total expenditure, were consistent

with Engel's law stating that, as income increases, the proportion of expenditure allocated on food decreases (Kinsey, 1994; Gibson, 2002; Gan & Vernon, 2003), or the proportion of expenditure on non-food is an increasing function of income (Haq & Bhatti, 2001).

The six household types demonstrated different stages of expenditure patterns. From the first household type (T1) to the sixth household type (T6), the types of expenditure patterns move from *basic* through to *high non-basic*. T1 showed a *basic* type of expenditure, in which the percentages of expenditure on carbohydrates (basic food) and on housing, health and clothing-footwear (basic non-food) were the largest, compared to the other household types. T2 started a *transitional* phase of expenditure, moving from *basic* to *non-basic* expenditure. The percentage of expenditure on carbohydrates, health and clothing-footwear (basic items) declined; whilst on protein, lipids, fibre, other, goods-services, education and tax-insurance (non-basic) it increased. T3 and T4 followed T2 and exhibited a transitional expenditure, proceeding from T1 through to T5 and T6. The percentage expenditure of T3 and T4 on basic items continued to decrease and on non-basic it continued to increase. T5 and T6 performed a *high non-basic* type of expenditure, in which more non-basic and added-value products were purchased. T5 had the largest percentage of expenditure on lipids, fibre and durable goods, whilst T6 had the largest percentage of expenditure on protein, other (including added-value products) and housing, compared to the other household types. These results in this study are supported by Rae (1996). He observed, particularly, different stages of food consumption patterns. The pattern stages of food consumption begin with traditional food, which contains a high proportion of traditional cereals and root crops, and move onto non-traditional food, which contain a higher proportion of non-traditional high-protein and other value-added foods.

The results showed that the majority (70 percent) of Indonesian households were very poor. In contrast, less than one percent (0.04) of households in Indonesia was very wealthy. This finding contradicts data published by the Indonesian Central Agency for Statistics (CBS), which estimated that in 1998 the percentage of Indonesian poor people was 24.23 percent of the total population (Sumodiningrat, 2003). It should be noted that these differences were caused by different methods of calculation for poor people, used in this study and the CBS study. The 'very poor' type (T1) had 15 percent of female-

headed households, which may indicate that the majority of households headed by females were very poor people. Furthermore, the six household types showed that expenditure in housing appeared to be significant and this percentage of expenditure was the largest in their non-food budget. This may indicate that housing was a necessity item for households across all types of households in Indonesia.

The general discussion above has addressed the objectives of the study that are presented in the introduction part of this chapter. The findings would contribute to an understanding of the impact of the economic crisis in 1997 on the economic welfare of Indonesian households, particularly in term of their expenditure, before and after the crisis in Indonesia.

6.2 Recommendations for future research

The Indonesian economic crisis, which began in 1997, has been viewed as having a negative effect on the country. A number of studies have been conducted to assess the impact of the economic crisis on households in Indonesia. However, there are ample opportunities to examine further what the economic crisis may have cost Indonesian households. This study investigated what was the impact of the 1997 economic crisis on the economic welfare of households in Indonesia, before and after the crisis. A range of approaches to measure the level of household welfare is available in literature. For the method of analysis, this study employed an approach, based on expenditure. Future research could be conducted with a similar topic but using different approaches. The findings of these studies can hopefully complement one another and provide a more complete understanding of the impact of the 1997 economic crisis on households in Indonesia.

This study investigated the impact of the 1997 economic crisis on Indonesian households in general, due to limitations on resources and particularly time. Future research could make a further exploration into the impact of the crisis on households in Indonesia, by sub-population, for example, by regions, provinces or areas of living (urban and rural). Research in the future could also investigate the sub-population of households, based on their socio-economic and demographic characteristics, such as household size, income and key characteristics of household heads (*e.g.* age, marital

status, gender and education). This study has examined some of these household characteristics and thus the results can serve as background information for any future research. Results from investigations into particular households could be recognised as of great importance since Hermawaty (2001) stated that Indonesia is a country with great diversity.

In line with an attempt to study households by sub-population, future research could also observe different types of households in Indonesia. This study built a typology of Indonesian households, based on similarities in their expenditure. An effort has been made to describe their average expenditure on different food and non-food items, from 1996 to 2002 and the results could be used as a basic knowledge for any future research which could analyse even further the six household types and the changes in their food and non-food expenditures during the period (1996-2002). The probability of Indonesian households falling into the six types, on the basis of their socio-economic and demographic characteristics, could be subsequently investigated in any future research. The findings would help determine the characteristics of membership of the household types. Furthermore, in order to capture more up-to-date findings, it is suggested that future research could employ more current data sets of Indonesian households.

For studies that demonstrate an interest in research from a more economic point of view, estimating expenditure elasticities for different food and non-food items for households of Indonesia could also be considered. The findings of the expenditure elasticity could help with an understanding of changes in the expenditure patterns of Indonesian households on different food and non-food items that have been investigated in this study for the three years (1996, 1999 and 2002). Moreover, the expenditure elasticity could also predict the likelihood of households buying the different food and non-food items in the future.

In this final part of recommendations for future research, it is expected that the results of this study will hopefully serve as a reference for the future research and furthermore, together with the results of any future research, could help policy makers and users, both private and public parties, design programmes and aids to better target recipients.

6.3 General conclusions of the study

The review of the literature and the results of the data analysis during the period 1996-2002 allow this study to make several general conclusions, which are as follows:

- Indonesia showed changes in economic development before and after the economic crisis in 1997. Review on some major macroeconomic indicators indicated that the economic crisis slowed Indonesian economic development.
- During the three years observed (1996, 1999 and 2002), households in Indonesia were characterised by:
 - an increase in the average income per month,
 - a decline in the average size of households,
 - an increase in the percentage of urban households, and
 - heads of households that were dominated by ages between 44-45 years old, male (90 percent), married (80 percent) who had a primary level of education (70 percent).
- From 1996 to 2002, changes in total expenditure may suggest that the economic crisis resulted in a decline in the purchasing power of Indonesian households. Up to the time of further adjustment of post crisis, as represented by 2002 household data, the households had not reached their capacity for buying goods and services as seen in 1996.
- Food appeared to be necessity, compared to non-food. Indonesian households were observed to prioritise food, rather than non-food expenditure, particularly when they experienced a difficult economic situation.
- Food consumption was more than 50 percent, and non-food was purchased less than 50 percent.
- For food, cereals and vegetables were demonstrated to be necessities; whilst meats, eggs-milk, fruits and prepared foods and drinks were luxuries. Non-food, necessity items were housing, goods-services, health and clothing-footwear; whilst luxury items were education, durable goods, tax-insurance and social activity.
- A typology of Indonesian households based on similarities in their expenditure identified six types of households. They were labelled from the 'very poor' type (T1) to the 'very wealthy' type (T6). These six types of households performed different stages of expenditure patterns, gradually moving from *basic* through to

high non-basic expenditure. The majority (70 percent) of Indonesian households were engaged in T1.

- In final conclusion, the Indonesian economic crisis in 1997 had a negative impact on households in Indonesia, with regard to their household expenditures. Up to the period post crisis-further adjustment (in 2002), the households still needed longer time to reach their higher level of expenditure as it performed in the period before the crisis (in 1996).

REFERENCES

- ADB, 1994. *Asian development outlook 1994*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 1998a. *Asian development outlook 1997-1998*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 1998b. *Key indicators of developing Asian and Pacific countries 1998*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 1999. *Asian development outlook 1999*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 2000. *Asian development outlook 2000*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 2001a. *Asian development outlook 2001*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 2001b. *Key indicators of developing Asian and Pacific countries 2001*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 2002. *Asian development outlook 2002*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 2003. *Asian development outlook 2003*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 2004a. *Asian development outlook 2004*. Asian Development Bank (ADB). Oxford University Press.
- ADB, 2004b. *Key indicators of developing Asian and Pacific countries 2004*. Asian Development Bank (ADB). Oxford University Press.
- Agbola, F.W., 2003. Estimation of food demand patterns in South Africa based on a survey of households. *Journal of Agricultural and Applied Economics*, 35 (3), 663-670.
- Akbay, C. and Boz, I., 2001. Food consumption patterns of socioeconomic groups: an application of censored system of equations. A paper presented at the ERC/METU Conference in Economics/V, 10-13 September 2001. Ankara, Turkey.
- Alimi, T., 2004. Migrasi urbanisasi dalam era perdagangan global (*urbanisation migration in the global trade era*). Surabaya Post Newspaper, 29 November 2004. Internet source: <http://www.terranet.or.id/tulisandetil.php?id=1610>. Retrieved 22 June 2005.

- Asra, A., 2000. Poverty and inequality in Indonesia. *Journal of the Asia Pacific Economy*, 5 (1/2), 91-111.
- Attanasio, O.P. and Szekely, M., 2004. Wage shocks and consumption variability in Mexico during the 1990s. *Journal of Development Economics*, 73, 1-25.
- Baker, R.W., Soesastro, M.H., Kristiadi, J., and Ramage, D.E., 1999. *Indonesia, the challenge of change*. Pasir Panjang, Singapore: Institute of Southeast Asian Studies.
- Beegle, K., Frankenberg, E., and Thomas, D., 1999. Measuring change in Indonesia. California, USA: RAND. Labor and Population Program. Working Paper Series 99-07 (unpublished paper).
- Beneito, P., 2003. A complete system of Engel curves in the Spanish economy. *Applied Economics*, 35, 803-816.
- Bertail, P. and Caillavet, F., 2003. Food consumption and poverty: a segmentation approach. Unpublished paper. France.
- Beverly, S.G., 2001. Material hardship in the United States: evidence from the survey of income and program participation. *Social Work Research*, 25 (3), 143-151.
- Bhandari, R. and Smith, F.J., 2000. Education and food consumption patterns in China: household analysis and policy implications. *Journal of Nutrition Education*, 3 (4), 214-224.
- Bongaarts, J., 2001. Household size and composition in the developing countries. New York, USA: The Population Council. Policy Research Division.
- Booth, A., 1997. *The Indonesian economy in the nineteenth and twentieth centuries: a history of missed opportunities*. New York, USA: St. Martin's Press.
- Booth, A., 2002. The changing role of non-farm activities in agricultural households in Indonesia: some insights from the agricultural censuses. *Bulletin of Indonesian Economic Studies*, 38 (2), 179-200.
- Bouma, G.D., 1996. *The research process*. Third edition. Australia: Oxford University Press.
- Bryman, A., 2004. *Social research methods*. Second edition. New York, USA: Oxford University Press.
- Caldwell, J.C. and Caldwell, B.K., 1997. Asia's demographic transition. *Asian Development Review*, 15 (1), 52-87.
- Carlson, W.L. and Thorne, B., 1997. *Applied statistical methods for business, economics and the social sciences*. Upper Saddle River, New Jersey, USA: Prentice Hall.

- CBS, 2000. *Statistical year book of Indonesia 1999*. Jakarta, Indonesia: The Central Agency for Statistics (CBS).
- CBS, 2001. *Statistical pocketbook of Indonesia*. Jakarta, Indonesia: The Central Agency for Statistics (CBS).
- CBS, 2005. Indonesian statistics. The Indonesian Central Agency for Statistics (CBS). Internet source: www.bps.go.id. Retrieved 1 August 2005.
- CCOP-EPF, 2002. Indonesian profile. Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP-EPF). Internet source: http://www.ccop.or.th/epf/indonesia/indonesia_profile.html. Retrieved 1 July 2005.
- CCSD, 2001. Defining and re-defining poverty: a CCSD perspective. Canadian Council on Social Development (CCSD). Internet source: <http://www.ccsd.ca/pubs/2001/povertyp.htm>. Retrieved 14 July 2005.
- Chernichovsky, D. and Meesok, O.A., 1984. Patterns of food consumption and nutrition in Indonesia: an analysis of the national socioeconomic survey, 1978. Washington D.C., USA: the World Bank. Working Papers No. 670.
- CIA, 2005. The world factbook. CIA. Internet source: <http://www.cia.gov/cia/publications/factbook/geos/id.html>. Retrieved 1 August 2005.
- Coakes, S.J. and Steed, L.G., 1999. *SPSS: analysis without anguish. version 7.0, 7.5, 8.0 for windows*. Australia: John Wiley and Sons Australia, Ltd.
- Craigie, M., Loader, B., Burrows, R., and Muncer, S., 2002. Reliability of health information on the internet: an examination of experts' ratings. *Journal of Medical Internet Research*, 4 (1), .
- Dale, A., Arber, S., and Procter, M., 1988. *Doing secondary analysis*. London, UK: Unwyn Hyman Ltd.
- Darwis, S.S.D., 2004. People mobility and employment in the rural areas. *Buletin of the Centre for Research and Development*, 18 (1), .
- Datt, G. and Hoogeveen, H., 2003. El Nino or El Peso? crisis, poverty and income distribution in the Philippines. *World Development*, 31 (7), 1103-1124.
- Deaton, A., 2004. Measuring poverty. Princeton University. Research Program in Development Studies. (unpublished paper).
- Deaton, A. and Grosh, M., 2000. Consumption. In: Grosh, M. and Glewwe, P. (eds), *Designing household survey. Questionnaires for developing countries. Lessons from 15 years of the living standards measurement study*. Washington D.C., USA: World Bank.

- Deeming, C., 2005. Minimum income standards: how might budget standards be set for the UK? *Journal Social Policy*, 34 (4), 619-636.
- Delgado, C.L., Hopkins, J., Kelly, V.A., Hazell, P.B.R., McKenna, A.A., Gruhn, P. *et al.*, 1998. Agricultural growth linkages in Sub-Saharan Africa. Washington, D.C., USA: International Food Policy Research Institute (IFPRI). Research Report 107.
- Denscombe, M., 1998. *The good research guide for small-scale social research projects*. Bunkingham, UK and Philadelphia, USA: Open University Press.
- Dien, L.N., Thang, N.M., and Bentley, M.E., 2004. Food consumption patterns in the economic transition in Vietnam. *Asia Pacific J Clin Nutr*, 13 (1), 40-47.
- Dignan, T. and McLaughlin, E., 2002. New TSN research: poverty in Northern Ireland. The Office of the First Minister and Deputy First Minister. Internet source: <http://www.research.ofmdfmini.gov.uk/povertyfull/fullpoverty.pdf>. Retrieved 16 December 2005.
- Djiwandono, J.S., 1999. Indonesia's economic management and the recent crisis. Points for presentation at a seminar for the Mason Fellows on Globalization and Governance, Kennedy School of Government, Harvard University, 4 November 1999. Internet source: http://www.pacific.net.id/pakar/sj/indonesias_economic_management.html. Retrieved 8 January 2006.
- Dorak, M.T., 2006. Common concepts in statistics. Internet source: <http://dorakmt.tripod.com/mtd/glosstat.html>. Retrieved 10 January 2006.
- Dukeov, I., Eklof, J., Cassel, C., Selivanova, I., and Murguletz, L., 2001. Living condition index measurements and analysis in Saint Petersburg, Russia. *Total Quality Management*, 12 (7&8), 1031-1036.
- Erdogan, G., 1997. Poverty definitions and poverty in Turkey. A paper presented at the Seminar on Poverty Statistics, 7-9 May 1997. Santiago.
- Everitt, B., 1993. *Cluster analysis*. Third edition. Cambridge: University Press.
- Fan, J.X. and Abdel-Ghany, M., 2004. Patterns of spending behavior and the relative position in the income distribution: some empirical evidence. *Journal of Family and Economic Issues*, 25 (2), 163 -178.
- Ferrer-i-Carbonell, A. and Van Den Bergh, J.C.J.M., 2004. A micro-econometric analysis of determinants of unsustainable consumption in the Netherlands. *Environmental and Resource Economics*, 27, 367-389.
- FHI, 2005a. Indonesia: family planning, family welfare and women's activities. Family Health International (FHI). Internet source: <http://www.fhi.org/en/RH/Pubs/wsp/fctshts/Indonesia1.htm>. Retrieved 28 August 2005.

- FHI, 2005b. Family planning, women's work and women's household autonomy. Family Health International (FHI). Internet source: <http://www.fhi.org/en/RH/Pubs/wsp/fctshts/Indonesial.htm>. Retrieved 28 August 2005.
- FHI, 2005c. Indonesia: reproductive decision-making and women's psychological well-being. Family Health International (FHI). Internet source: <http://www.fhi.org/en/RH/Pubs/wsp/fctshts/Indonesial.htm>. Retrieved 28 August 2005.
- Fink, A., 2005. *Conducting research literature review. from the internet to paper*. Thousand Oaks, California: Sage Publications.
- Firman, T., 1996. Penyelenggaraan pembangunan perkotaan (*city development*). Kompas Newspaper, 18 September 1996. Internet source: <http://www.geocities.com/nuds2/13.html>. Retrieved 22 June 2005.
- Fisher, G.M., 1992. The development and history of the poverty thresholds. *Social Security Bulletin*, 55 (4),
- Fisher, G.M., 2001. "Enough for a family to live on?" - questions from members of the American public and new perspectives from British social scientists. A paper presented at the twenty-third annual research conference of the association for public policy analysis and management. Washington D.C., 2 November 2001.
- Flemming, M.C. and Nellis, J.G., 1994. *Principles of applied statistics*. London, New York: Routledge.
- Frazao, E., 1993. Female-headed households spend less on food. *Food Review*, 16 (2), .
- Friend, T., 2000. Indonesia: confronting the political and economic crisis. A paper presented for the House Committee on International Relations, subcommittee on Asia and the Pacific, 16 February 2000. Internet source: http://www.unc.edu/depts/diplomat/AD_Issues/amdipl_15/friend_confront1.html. Retrieved 11 January 2006.
- Fritsche, M., 1996. The pattern of food intake and essential expenditure for a household in rural Ethiopia. United Nations Development Programme. UNDP Emergencies Unit for Ethiopia (UNDP-EUE).
- Gan, L. and Vernon, V., 2003. Testing the Barten model of economies of scale in household consumption: toward resolving a paradox of Deaton and Paxson. *Journal of Political Economy*, 111 (6), .
- Garson, D., 2005. Univariate GLM, ANOVA and ANCOVA. A study guide for quantitative research in public administration. USA: North Carolina State University. Internet source: <http://www2.chass.ncsu.edu/garson/pa765/anova.htm>. Retrieved 10 January 2006.

- Gibson, J., 2002. Why does the Engel method work? food demand, economies of size and household survey methods. *Oxford Bulletin of Economics and Statistics*, 64 (4), .
- Golafshani, N., 2003. Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8 (4), 597-607.
- Hair, J.F., Anderson, R.E., Tatham, R.L., and Black, W.C., 1998. *Multivariate data analysis*. Fifth edition. Englewood Cliffs, N.J. ; London: Prentice Hall.
- Hakim, D.B., 1994. Household food expenditure patterns in urban Java, Indonesia. Thesis (master). Massey University. New Zealand.
- Haq, R. and Bhatti, M.A., 2001. Estimating poverty in Pakistan: the non-food consumption share approach. Pakistan Institute of Development Economics. Research Report No. 183.
- Hart, C., 2001. *Doing a literature search. a comprehensive guide for the social science*. London: Sage Publications.
- Hazell, P.B.R. and Roell, A., 1983. Rural growth linkages: household expenditure patterns in Malaysia and Nigeria. Washington D.C., USA: International Food Policy Research Institute. Research Report No. 41.
- Heaton, J., 2004. *Reworking qualitative data*. London ; Thousand Oaks, California: Sage Publications.
- Hendriks, S.L. and Lyne, M.C., 2003. Expenditure patterns and elasticities of rural households sampled in two communal areas of KwaZulu-Natal. *Development Southern Africa*, 20 (1), 105-127.
- Hermawati, W., 2001. Assessment of resources, best practices and gaps in gender, science and technology in Indonesia. Jakarta, Indonesia: Research Center for Science and Technology Development, Indonesian Institute of Sciences (PAPIPTEK-LIPI). UNESCO-UNDP APGEN SPPD Project Report.
- Hill, H., 2000. *Indonesian economy*. Second edition. Jakarta, Indonesia: Murai Kencana.
- Hugo, G., 2000. The impact of the crisis on internal population movement in Indonesia. *Bulletin of Indonesian Economic Studies*, 36 (2), 115-138.
- Hutasuhut, M., Chang, H.S., Griffith, G., O'Donnell, C., and Doran, H., 2002. The demand for beef in Indonesia: implications for Australian agribusiness. Kent Town, SA. Australia: University of New England. Graduate School of Agricultural and Resource Economics and School of Economics. Working paper series in agricultural and resource economics.
- Hyman, H.H., 1972. *Secondary analysis of sample surveys: principles, procedures, and potentialities*. New York, USA: John Wiley & Sons, Inc.

- Indonesia, 2006. Map of South East Asia including Indonesia. University of Texas Libraries at Austin. Internet source: <http://www.lib.utexas.edu/maps/indonesia.html>. Retrieved 31 January 2006
- Ishida, A., Law, S.H., and Aita, Y., 2003. Changes in food consumption expenditure in Malaysia. *Agribusiness*, 19 (1), 61-76.
- Johnson, R.A. and Wichern, D.W., 1992. *Applied multivariate statistical analysis*. Third edition. Englewood Cliffs, N.J, USA: Prentice-Hall International Editions.
- Jones, G.W., 2001. Schooling in Indonesia: crisis-related and longer-term issues. *Bulletin of Indonesian Economic Studies*, 37 (2), 207-231.
- Jorgensen, D.W., 1998. Did we lose the war on poverty. *Economic Perspectives*, 12 (1),
- Kakwani, N. and Krongkaew, M., 2000. Analysing poverty in Thailand. *Journal of the Asia Pacific Economy*, 5 (1/2), 141-160.
- Kayastha, P., 1999. The role of off-farm income in sustaining households in rural Nepal. Thesis (master). Massey University. New Zealand.
- Khudori, 2005. Political economy for rice. Kompas newspaper, 5 January 2005. Internet source: <http://www.kompas.co.id/kompas-cetak/0601/05/opini/2341146.htm>. Retrieved 28 January 2006.
- Kiecolt, K.J. and Nathan, L.E., 1985. Secondary analysis of survey data. In: Sullivan, J.L. and Niemi, R.G. (eds), *Quantitative Applications in the Social Science*. Beverly Hills, California, USA: Sara Miller McCune, Sage Publications, Inc.
- Kinsey, J.D., 1994. Food and families' socioeconomic status. *Journal of Nutrition*, 124 (9), 1878S-1886S.
- Kompas, 2003. Kesulitan ekonomi, perceraian di Bogor meningkat (*economic difficulties, numbers of divorces increased in Bogor*). Internet source: <http://www.kompas.com/kompas-cetak/0307/15/metro/431210.htm>. Retrieved 1 August 2005.
- Kumar, S.K., 1985. The income approach to measuring poverty: a note on human welfare below the line. In: Mellor, J.W. and Narain, G.M. (eds), *Agricultural change and rural poverty*. International Food Policy Research Institute (IFPRI).
- Kusago, T. and Barham, B.L., 2001. Preference heterogeneity, power, and intrahousehold decision-making in rural Malaysia. *World Development*, 29 (7), 1237-1256.
- Liu, K.E. and Chern, W.S., 2001. Effects of model specification and demographic variables on food consumption: microdata evidence from Jiangsu, China. A paper presented on 11th Annual World Food and Agribusiness Forum, World Food and Agribusiness Symposium of the International Food and Agribusiness Management Association, 27-28 June 2001. Sydney, Australia.

- LOC, 1992. Indonesia country studies. The Federal Research Division. The Library of Congress (LOC). Internet source: <http://www.country-studies.com/Indonesia>. Retrieved 1 August 2005.
- Luo, W., Zhai, F., Jin, S., and Ge, K., 2001. Intrahousehold food distribution: a case study of eight provinces in China. *Asia Pacific J Clin Nutr*, 10 (Suppl), S19-S28.
- Mankiw, N.G., 2003. *Macroeconomics*. Fifth edition. New York, NY. USA: Worth Publishers.
- Manly, B.F.J., 2005. *Multivariate statistical methods: a primer*. Boca Raton, FL, USA: Chapman & Hall/CRC Press.
- Manning, C., 1994. What has happened to wages in the new order. *Bulletin of Indonesian Economic Studies*, 30 (3), 73-114.
- Manning, C., 2000. Labour market adjustment to Indonesia's economic crisis: context, trends and implications. *Bulletin of Indonesian Economic Studies*, 36 (1), 105-136.
- Mardhana, B.D. and Joko, D., 2004. Budaya makan di luar rumah bangkitkan bisnis restoran (*custom of eating away-home food stimulates business restaurants*). Sinar Harapan newspaper online, 3 August 2004. Internet source: <http://www.sinarharapan.co.id/ceo/2004/0308/ceo1.html>. Retrieved 28 June 2005.
- McGee, T.G. and Scott, S., 2000. The poor at risk: surviving the economic crisis in Southeast Asia. Vancouver, Canada: University of British Columbia. Institute of Asian Research. Centre for Southeast Asian Research.
- McKenzie, D.J., 2001. The household response to the Mexican peso crisis. Stanford, California: Stanford University. Department of Economics.
- Meghir, C., 2002. Retrospective on Friedman's theory of permanent income. London: The Institute for Fiscal Studies and University College London. Working Paper (WP04/01).
- MH, 2004. Iklan rokok jadi masalah besar kesehatan masyarakat Indonesia (*smoking advertisement is a problem for health of the Indonesians*). The Indonesian Ministry of Health website, 18 June 2004. Internet source: <http://www.depkes.go.id/index.php?option=news&task=viewarticle&sid=480&Itemid=2>. Retrieved 17 June 2005.
- Mikkelsen, B., 1995. *Methods for development work and research: a guide for practitioners*. New Delhi ; Thousand Oaks: Sage Publications India Pvt Ltd.
- Milanovic, B. and Jovanovic, B., 2000. Change in the perception of the poverty line during the times of depression: Rusia 1993-96. The World Bank. Policy Research Paper Series. No. 2077.

- Moeis, J.P., 2003. Indonesian food demand system: an analysis of the impacts of the economic crisis on household consumption and nutritional intake. Thesis (PhD). George Washington University. Washington D.C., USA.
- Mubyarto, 2002. Indonesian society economy post crisis. *Journal of Society Economy*, 1 (9),
- Munro, B.H., 2005. Logistic regression. In: Munro, B.H. (eds), *Statistical methods for health care research*. Fifth edition. Philadelphia, USA: Lippincott Williams & Wilkins.
- Nam, C.B., Dasvarma, G.L., and Rahardjo, S.P., 1991. The changing age distribution in Indonesia and some consequences. *Bulletin of Indonesian Economic Studies*, 27 (2), 121-136.
- Neuman, W.L. and Kreuger, L.W., 2003. *Social work research methods: qualitative and quantitative approaches*. Boston, USA: Allyn and Bacon.
- Noble, M., Ratcliffe, A., and Wright, G., 2004. Conceptualizing, defining and measuring poverty in South Africa - an argument for a consensual approach. Centre for the Analysis of South African Social Policy. University Oxford. Internet source: <http://www.casasp.ox.ac.uk/docs/consensual%20Definitions%20nov%2011>. Retrieved 15 December 2005.
- O'Leary, Z., 2004. *The essential guide to doing research*. London, UK: SAGE.
- Orshansky, M., 1977. The measure of poverty. US Department of Health, Education and Welfare. Social Security Administration. Office of Research and Statistics. Technical Paper I. Documentation of Background Information and Rationale for Current Poverty Matrix.
- Oulette, T., Burstein, N., Long, D., and Beecroft, E., 2004. Measures of material hardship. USA: US Department of Health and Human Services. Office of the Secretary. Office of the Assistant Secretary for Planning and Evaluation. Final Report.
- Pallant, J., 2005. *SPSS survival manual: a step by step guide to data analysis using SPSS for Windows (Version 12)*. Second edition. Crows Nest, N.S.W: Allen & Unwin.
- Pasandaran, E., 1995. Food supply and demand in Indonesia. Food and Fertilizer Technology Center. Internet source: <http://www.agnet.org/library/article/bc46010.html>. Retrieved 7 July 2005
- Pasaribu, H.B., 2002. Puncak krisis ketenagakerjaan (*labour crisis*). Ambon nasional-m@polarhome.com. Suara Karya newspaper, 11 October 2002. Internet source: <http://gate.polarhome.com/pipermail/nasional-m/2002-October/000346.html>. Retrieved 10 November 2005

- Purba, M., Lukito, W., Wahlqvist, M.L., Kouris-Blazos, A., Hadisaputro, S., Lestiani, L. *et al.*, 1999. Food intake and eating patterns of Indonesian elderly before the 1998 economic crisis. *Asia Pacific J Clin Nutr*, 8 (3), 200-206.
- Rae, A.N., 1996. Food consumption patterns in Indonesian households: segmenting the market. Palmerston North, New Zealand: Center for Applied Economic Policy Studies. School for Applied and International Economics. Massey University.
- Rae, A.N., 1999. Food consumption patterns and nutrition in urban Java households: the discriminatory power of some socioeconomic variables. *The Australian Journal of Agricultural Resource Economics*, 43 (3), 359-383.
- Rafiq, A. and Hailemariam, A., 1986. Household size in Ethiopia: variations and some recent correlates. *Ethiop J. Dev. Res*, 8 (2), 71-100.
- Ramos, X. and Silber, J., 2005. On the application of efficiency analysis to the study of the dimensions of human development. *Review of Income and Wealth*, 51 (2), 285-300.
- RAND, 1995. How economic opportunities and family-planning programs control population growth. RAND. Research Brief.
- Rogers, B.L., 1996. The implications of female household headship for food consumption and nutritional status in the Dominican Republik. *World Development*, 24 (1), 113-128.
- Sahn, D.E. and Stifel, D., 2003. Exploring alternative measures of welfare in the absence of expenditure data. *The Review of Income and Wealth*, 49 (4), 463.
- Said, A., 2000. Monetary and non-monetary measures of poverty in Indonesia: a statistical comparison. Montreaux: Statistique, Development et Droits de l'Homme.
- Sanda, A., 2004. Usaha kecil dan menengah: kekuatan ekonomi nasional (*small-medium businesses, the power of national economy*). Kompas online newspaper, 8 November 2004. Internet source: <http://www.kompas.com/kompas-cetak/0411/08/metro/1370350.htm>. Retrieved 28 January 2006.
- Santoso, S., 1999. *SPSS: mengolah data statistik secara profesional*. Jakarta, Indonesia: PT Elex Media Komputindo.
- Sarlo, C.A., 2001. *Measuring poverty in Canada*. Canada: Fraser Institute.
- SAS, 1982. *SAS user's guide: basics*. 1982 edition. NC, USA: SAS Institute Inc.
- SAS, 2005. *SAS/STAT User's Guide*. Internet source: <http://www.id.unizh.ch/software/unix/statmath/sas/sasdoc/stat/index.htm>. 2005
- Sassani, H., 2004. Household food expenditures used as indicators of basic needs and social norms. Thesis (master). University of Manitoba, Canada.

- Saunders, P., 2004. Towards a credible poverty framework: from income poverty to deprivation. Sydney, Australia: The Social Policy Research Centre. University of New South Wales. SPRC Discussion Paper No. 131.
- Schloss, P.J. and Smith, M.A., 1999. *Conducting research*. Upper Saddle River, NJ., USA: Prentice Hall.
- Schwarz, A., 1999. *A nation in waiting: Indonesia in the 1990s*. St. Leonards, N.S.W: Allen & Unwin.
- Sedlack, R.G. and Stanley, J., 1992. *Social research: theory and methods*. Needham Height, MA, USA: Allyn & Bacon.
- Sharma, S., 1996. *Applied multivariate techniques*. New York, USA: John Wiley & Sons, Inc.
- Slesnick, D.T., 1993. Gaining ground: poverty in the postwar United States. *Journal of Political Economy*, 101 (1), 1-38.
- SMERU, 2000. Pelayanan kesehatan semasa krisis (*health services during the crisis*). Social Monitoring Early Response Unit (SMERU). SMERU Newsletter. 09 January-April 2000. Internet source: <http://www.smeru.or.id/newslet/2000/ed09/field92.htm>. Retrieved 1 September 2005.
- Soekirman, 2001. Food and nutrition security and the economic crisis in Indonesia. *Asia Pacific J Clin Nutr*, 10 (suppl), S57-S61.
- Suhartini, S.H., Nurwati, A., and Wahyu, K., 2004. Dampak krisis ekonomi terhadap ketahanan pangan masyarakat berpendapatan rendah di pulau lombok (*the impact of the economic crisis on food security of people with low-level of income in Lombok island*). Informasi teknologi pertanian (infotek), vol. 1. no. 2. Internet source: http://ntb.litbang.deptan.go.id/buletin_1b.htm#bb_17. Retrieved 30 January 2006
- Sumodiningrat, G., 2003. The role of micro financial institutions in poverty alleviation related to the policy of regional autonomy. *Journal of People Economy*, II (1), .
- Sunderlin, W.D., Resosudarmo, I.A.P., Rianto, E., and Angelsen, A., 2000. The impact of the Indonesian economic crisis on small farmers and natural forests in outer Java. Bogor, Indonesia: Center for International Forestry Research. Occasional Paper No. 28(1).
- Suryahadi, A. and Sumarto, S., 1999. Update on the impact of the Indonesian crisis on consumption expenditures and poverty incidence: results from the December 1998 round of 100 village survey. Jakarta, Indonesia: Social Monitoring and Early Response Unit (SMERU).

- Suryahadi, A., Sumarto, S., Suharso, Y., and Pritchett, L., 1999. The evolution of poverty during the crisis in Indonesia, 1996 to 1999. Jakarta: Social Monitoring and Early Response Unit (SMERU).
- Suryahadi, A., Widyanti, W., Perwira, D., and Sudarno, S., 2003. Minimum wage policy and its impact on employment in the urban formal sector. *Bulletin of Indonesian Economic Studies*, 39 (1), 29-50.
- UN, 2004. World urbanization prospects: the 2003 revision. United Nations (UN). Department of Economic and Social Affairs. Population Division.
- USAID, 2001. Indonesia. USAID. Internet source:
<http://www.usaid.gov/pubs/bj2001/ane/id>. Retrieved 8 January 2006.
- Usman, S., 2002. Regional autonomy in Indonesia: field experiences and emerging challenges. Jakarta, Indonesia: The SMERU Research Institute. Working Paper.
- Warsono, S.H., 2005. Transmigrasi dan pengaruhnya terhadap urbanisasi (*transmigration and its effect on urbanisation*). BALITFO Bulletin. Internet source:
http://www.nakertrans.go.id/majalah_buletin/majalah_balitfo/volume_2_1/trans_urbanisasi.php. Retrieved 18 June 2005.
- Wasito, E., Pritasari, Susilowati, D., Iswarawanti, D.N., Schultink, W., and Gross, R., 2001. Temporary stability of urban food and nutrition security: the East Jakarta study. *Asia Pacific J Clin Nutr*, 10 (Suppl), S29-S33.
- WB, 2003. Cities in transition: decentralization era in Indonesia. Jakarta, Indonesia: Urban Sector Development Unit. Infrastructure Department. East Asia and Pacific Region. The World Bank. East Asia Urban Working Paper Series. Dissemination Paper No. 7.
- Webb, P., 2002. The dynamics of food, nutrition and poverty in South-East Asia. The Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy. Food Policy and Applied Nutrition Program. Discussion Paper No. 9.
- Webb, P. and Lapping, K., 2002. Are the determinants of malnutrition the same as for 'food insecurity'? recent findings from 6 developing countries on the interaction between food and nutrition security. The Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy. Food Policy and Applied Nutrition Program. Discussion Paper No. 6.
- Webster-Dictionary, 1996. Welfare. In: Neufeldt, V. and Guralnik, D.B. (eds), *Webster's new world college dictionary*. New York, USA: Mcmillan.
- Weinberg, D.H., 1995. Measuring poverty: issues and approaches. Washington, USA: US Bureau of the Census. Poverty Measurement Working Papers.
- Widjajanti, E. and Li, E., 1996. Food expenditure patterns in urban and rural Indonesia, 1981 to 1993. *Australian Agribusiness Review*, 4 (2), .

- Wodon, Q.T., 2000. Microdeterminants of consumption, poverty, growth and inequality in Bangladesh. *Applied Economics*, 32, 1337-1352.
- Wong, C. and Wong, H., 2004. The case for an expenditure-based poverty line for the newly industrialized East Asian societies. *Issues and Studies*, 40 (2), 184-205.
- Zhang, X., 2002. The dynamics of Chinese consumers: a case of Shanghai food consumption. *Journal of International Food and Agribusiness Marketing*, 14 (1), 47-66.

APPENDICES

Appendix 1.

The results of the Chi-Square tests for the characteristics of Indonesian households.

Household characteristics	Pearson chi-square (χ^2)	Sig.
Area of living of hs.	444.803	.000
Gender of hs. heads	46.085	.000
Marital status of hs. heads	189.554	.000
Education of hs. heads	280.553	.000

0 cells (0.0%) have an expected count of less than 5.

Appendix 2

The results of ANOVA with post-hoc tests for the characteristics of Indonesian households.

Hs. characteristics	df		Welch value	Sig.	Sig. of multiple comparisons		
	df1	df2			1996-1999	1999-2002	1996-2002
Income of household	2	116307.53	610.629	.000	.000	.000	.000
Size of household	2	117868.22	561.689	.000	.000	.000	.000
Age of hs. heads	2	118536.38	20.205	.000	.000	.000	.771

Note : 1. The post-hoc tests used the Tamhane test.
2. The mean difference is significant at the 0.05 level.

Appendix 3

The results of ANOVA with post-hoc tests for the average household expenditure in Indonesia.

Expenditure	df		Welch value	Sig.	Sig.of Multiple comparisons		
	df1	df2			1996-1999	1999-2002	1996-2002
Food expenditure	2	118809.96	218.596	.000	.000	.187	.000
Non-food expenditure	2	108030.52	41.415	.000	.000	.000	.097
Average hs. expenditure	2	111734.55	47.253	.000	.001	.000	.000

Note : 1. The post-hoc tests used the Tamhane test.
2. The mean difference is significant at the 0.05 level.

Appendix 4

The results of ANOVA with post-hoc tests for the expenditure on food items of Indonesian households.

Food expenditure	df		Welch value	Sig.	Sig. of Multiple comparisons		
	df1	df2			1996-1999	1999-2002	1996-2002
Food	2	118809.96	218.596	.000	.000	.187	.000
Cereal	2	116432.63	3377.647	.000	.000	.472	.810
Tuber	2	118678.80	24.448	.000	.000	.536	.000
Meat	2	117405.39	662.878	.000	.000	.000	.000
Eggs-milk	2	119172.18	189.638	.000	.000	.000	.000
Fish	2	117998.35	42.084	.000	.000	1.000	.000
Pulses	2	116985.44	175.644	.000	.000	.000	.000
Vegetables	2	116772.58	1124.223	.000	.000	.000	.000
Fruits	2	115509.58	1489.533	.000	.000	.000	.000
Fat-oil	2	115432.74	1651.173	.000	.000	.000	.000
Spices	2	119297.11	298.434	.000	.000	.000	.000
Prepared food-drink	2	118938.28	276.074	.000	.000	.000	.000
Others	2	117525.17	65.554	.000	.000	.000	.000
Tobacco	2	118769.30	1568.022	.000	.000	.000	.000
Beverages	2	116496.00	330.341	.000	.000	.000	.000
Alcohol	2	114949.12	31.947	.000	.000	.000	.999

Note : 1. The post-hoc tests used the Tamhane test.
2. The mean difference is significant at the 0.05 level.

Appendix 5.

The results of ANOVA with post-hoc tests for the expenditure on non-food items of Indonesian households.

Non-food expenditure	df		Welch value	Sig.	Sig. of Multiple comparisons		
	df1	df2			1996-1999	1999-2002	1996-2002
Non-food	2	108030.52	41.415	.000	.000	.000	.097
Housing	2	97696.512	8.337	.000	.035	.000	.009
Good services	2	118810.40	200.826	.000	.003	.000	.000
Education	2	113051.76	136.379	.000	.000	.000	.059
Health	2	113273.68	79.011	.000	.003	.000	.000
Clothing - footwear	2	117954.94	138.352	.000	.000	.000	.004
Durable goods	2	112319.97	154.231	.000	.000	.000	.000
Tax – insurance	2	119110.88	221.361	.000	.000	.000	.000
Social activity	2	113001.02	44.749	.000	.000	.040	.118

Note : 1. The post-hoc tests used the Tamhane test.
2. The mean difference is significant at the 0.05 level.

Appendix 6.

DEVELOPING A TYPOLOGY OF INDONESIAN HOUSEHOLDS

It was decided that, to develop the typology of Indonesian households, this study would implement a cluster analysis. The following sections discuss the process of the data management and the process of the cluster analysis undertaken in this study.

Data management

For the purpose of study, new variables of food expenditure, based on the main nutrients, were created as follows: *carbohydrates* (cereals and tubers), *protein* (eggs-milk and pulses), *lipid* (meat and fat-oil), *fibre* (vegetables and fruit) and *others* (spices, beverages, prepared foods and drinks, tobacco, alcohol and other).

The dependent variables, used as the pre-determined criterion for selection of the clusters, were a set of variables consisting of 13 dependent variables. The dependent variables were carbohydrates, protein, lipids, fibre and others for *food expenditure*, and housing, goods and services, clothing and footwear, education, durable goods, health, taxes and insurances and social activities for *non-food expenditure*. The variables of household socio-demographic characteristics, that were included in the cluster analysis, were: household size (HSIZE); household head characteristics age (AGE); education (EDUC); occupation (JOB); gender (GENDER); marital status (MARSTAT); and residence (RESIDENCE).

Process of cluster analysis

The procedure for the cluster analysis conducted in this research was as follows: Firstly, from two and up to twenty clusters were developed for each data set (1996, 1999 and 2002). The *fastclus* procedure of the SAS[®] system, with a clustering method of sequential threshold procedure, was applied to this analysis. The SAS[®] system incorporates the method of sequential threshold procedure, which is an example of a non-hierarchical clustering programme that is particularly suitable for large data sets (Hair *et al.*, 1998). As previously noted, the SUSENAS data used in this study was a large data set.

Secondly, the number of clusters formed for this study was determined. According to Hair *et al.*, (1998), there has been no standard procedure to determine the number of clusters to be formed. Researchers may choose the procedures that have been proposed in the literature and then make their final decision by using a priori criteria, practical judgement, common sense and theoretical foundations.

This study used the *cluster cubic criterion* (CCC) to determine the number of clusters to be formed. The SAS software system provides the value of CCC in the output of the cluster analysis. The CCC has been a common procedure for selection (Hair *et al.*, 1998). Besides the CCC, this study used practical judgment and common sense to make the final decision on the number of clusters to be formed. The practical judgement and common sense factor included the number of the households in the clusters, similarity in characteristics of households and the use of a manageable number of the clusters. Table appendix 6.1 displays the values of CCC for each data set (1996, 1999 and 2002).

This study looked at the number of clusters that produced CCC, with relatively similar values, or produced CCC with small differences. In the 1996 data set, the 8 clusters and the 9 clusters had a relatively similar value to the CCC: 122.306 and 122.456, respectively. The 17 and 18 clusters made the smallest difference to CCC, 0.306 which was comparable with the other number of clusters. For the 1999 data set, the 8 clusters and 9 clusters gave the smallest difference of CCC, 2.311, relative to the other number of clusters. In the 2002 data set, the smallest difference of CCC was observed between the 6 clusters and the 7 clusters (1.45); the 8 clusters and the 9 clusters (1.76); and the 12 clusters and the 13 clusters (1.18). The 15 clusters and the 16 clusters made relatively similar values of CCC: 116.942 and 116.164, respectively. Comparing all these values for the CCC for the three data sets, the results suggest that households could be formed into nine groups for each data set.

Table appendix 6.1 Values of CCC, 1996, 1999 and 2002.

Number of cluster	1996	1999	2002
2	-53.315	286.495	67.315
3	-81.857	141.481	50.146
4	3.938	104.687	48.591
5	69.420	80.961	29.595
6	79.481	72.023	39.435
7	116.279	64.571	37.982
8	122.306	85.502	50.928
9	122.456	83.191	52.688
10	165.849	63.676	38.468
11	138.430	78.107	29.298
12	174.020	65.651	112.402
13	184.752	77.780	113.584
14	206.925	74.508	108.004
15	180.933	64.251	116.942
16	225.260	72.525	116.164
17	221.848	66.161	114.238
18	222.154	74.971	109.609
19	260.604	59.228	125.395
20	289.078	76.743	135.966

The next criterion, that were used to determine the final number of clusters, were practical judgement and common sense, including the number of households in the clusters, similarity in terms of characteristics of the households, and the manageable number of clusters. For clusters number 6, 7, 8, and 9, each demonstrated having a small number of households, with around, or less than, 500 households. The households in these clusters were largely located in the urban areas (more than 80 percent). From these criteria of practical judgement and common sense, the number of clusters was reduced from nine to six, thus ensuring that the analysis was more manageable. Ultimately this study decided to have six clusters of households for each data set. For the purpose of this study, the term cluster was replaced by *type*.

The six household types corresponded one to another over the three years. For example, T1 in 1996 corresponds to T1 in 1999 and 2002. Similarly, T2 relates to T2 in 1999 and 2002, and so on. Consequently, the changes in their expenditure patterns could be monitored over time, during the period 1996-2002.

Appendix 7.

Average household expenditure per month by household types in Indonesia during 1996-2002.

<i>Poor types</i>		'Very poor' (T1)			'Modestly poor' (T2)			'Somewhat poor' (T3)		
year		1996	1999	2002	1996	1999	2002	1996	1999	2002
n		40,971	39,322	48,741	12,681	15,447	13,589	2,549	2,912	1,902
		mean	mean	mean	mean	mean	mean	mean	mean	mean
Total expenditure		189,111	185,696	208,329	488,908	409,681	546,343	964,571	870,199	1,289,382
%		100	100	100	100	100	100	100	100	100
Food		122,902	130,496	138,457	271,908	265,568	297,430	376,931	395,943	463,912
%		65.0	70.3	66.5	55.6	64.8	54.4	39.1	45.5	36.0
Non-food		66,209	55,200	69,872	217,000	144,113	248,913	587,640	474,256	825,470
%		35.0	29.7	33.5	44.4	35.2	45.6	60.9	54.5	64.0
<i>Wealthy types</i>		'Somewhat wealthy' (T4)			'Modestly wealthy' (T5)			'Very wealthy' (T6)		
year		1996	1999	2002	1996	1999	2002	1996	1999	2002
n		333	270	158	46	22	16	38	12	16
		mean	mean	mean	mean	mean	mean	mean	mean	mean
Total expenditure		2,224,892	1,651,103	3,213,871	3,663,426	5,416,418	7,902,706	4,707,614	43,334,598	19,896,615
%		100	100	100	100	100	100	100	100	100
Food		557,599	504,251	738,110	416,055	745,517	952,620	519,476	2,350,867	821,401
%		25.1	30.5	23.0	11.4	13.8	12.1	11.0	5.4	4.1
Non-food		1,667,293	1,146,852	2,475,761	3,247,371	4,670,901	6,950,086	4,188,138	40,983,731	19,075,214
%		74.9	69.5	77.0	88.6	86.2	87.9	89.0	94.6	95.9

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source : The SUSENAS (1996; 1999; 2002).

Appendix 8 Average household expenditure on food items per month by household types in Indonesia during 1996-2002.

<i>Poor types</i>		'Very poor' (T1)			'Modestly poor' (T2)			'Somewhat poor' (T3)		
<i>year</i>		1996	1999	2002	1996	1999	2002	1996	1999	2002
<i>n</i>		40,971	39,322	48,741	12,681	15,447	13,589	2,549	2,912	1,902
		<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>
<i>Food expenditure</i>										
Carbohydrates		36,536	45,107	38,002	46,317	60,380	43,238	47,898	60,219	46,043
%		29.7	34.6	27.4	17.0	22.7	14.5	12.7	15.2	9.9
Protein		20,964	20,932	24,519	52,162	49,342	54,202	76,192	76,559	87,949
%		17.1	16.0	17.7	19.2	18.6	18.2	20.2	19.3	19.0
Lipid		11,156	10,308	11,267	30,622	22,951	28,463	52,141	43,841	58,175
%		9.1	7.9	8.1	11.3	8.6	9.6	13.8	11.1	12.5
Fibre		17,253	17,966	18,340	38,277	33,311	37,513	57,500	52,220	63,080
%		14.0	13.8	13.2	14.1	12.5	12.6	15.3	13.2	13.6
Other		36,993	36,183	46,329	104,530	99,584	134,014	143,200	163,104	208,665
%		30.1	27.7	33.5	38.4	37.5	45.1	38.0	41.2	45.0
<i>Total food</i>		122,902	130,496	138,457	271,908	265,568	297,430	376,931	395,943	463,912
%		100	100	100	100	100	100	100	100	100
<i>Wealthy types</i>		'Somewhat wealthy' (T4)			'Modestly wealthy' (T5)			'Very wealthy' (T6)		
<i>year</i>		1996	1999	2002	1996	1999	2002	1996	1999	2002
<i>n</i>		333	270	158	46	22	16	38	12	16
		<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>
<i>Food expenditure</i>										
Carbohydrates		52,966	65,892	50,513	46,133	67,838	52,547	59,028	84,227	55,451
%		9.5	13.1	6.8	11.1	9.1	5.5	11.4	3.6	6.8
Protein		113,377	103,400	127,566	74,232	129,963	165,111	106,041	445,138	172,359
%		20.3	20.5	17.3	17.8	17.4	17.3	20.4	18.9	21.0
Lipid		93,821	68,510	85,139	63,390	114,934	119,696	90,496	232,307	85,219
%		16.8	13.6	11.5	15.2	15.4	12.6	17.4	9.9	10.4
Fibre		90,122	68,375	100,309	73,504	103,633	115,024	84,987	209,684	113,936
%		16.2	13.6	13.6	17.7	13.9	12.1	16.4	8.9	13.9
Other		207,314	198,074	374,583	158,796	329,149	500,242	178,925	1,379,511	394,435
%		37.2	39.3	50.7	38.2	44.2	52.5	34.4	58.7	48.0
<i>Total food</i>		557,599	504,251	738,110	416,055	745,517	952,620	519,476	2,350,867	821,401
%		100	100	100	100	100	100	100	100	100

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source : The SUSENAS (1996; 1999; 2002).

Appendix 9

Average household expenditure on non-food items per month by household types in Indonesia during 1996-2002.

<i>Poor types</i>	'Very poor' (T1)			'Modestly poor' (T2)			'Somewhat poor' (T3)			
	<i>year</i>	1996	1999	2002	1996	1999	2002	1996	1999	2002
	<i>n</i>	40,971	39,322	48,741	12,681	15,447	13,589	2,549	2,912	1,902
		<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>
<i>Non-food expenditure</i>										
Housing		29,674	23,968	31,272	81,740	57,135	98,572	277,610	198,759	350,505
%		44.8	43.4	44.8	37.7	39.6	39.6	47.2	41.9	42.5
Goods & services		8,266	8,681	10,982	33,863	27,845	48,244	104,116	95,849	200,869
%		12.5	15.7	15.7	15.6	19.3	19.4	17.7	20.2	24.3
Education		3,514	3,006	3,729	15,665	9,528	16,306	50,933	34,181	60,468
%		5.3	5.4	5.3	7.2	6.6	6.6	8.7	7.2	7.3
Health		2,968	2,858	4,137	8,512	6,699	11,809	19,838	17,057	37,641
%		4.5	5.2	5.9	3.9	4.6	4.7	3.4	3.6	4.6
Clothing		10,800	9,814	11,188	26,301	21,696	26,706	44,198	38,386	52,202
%		16.3	17.8	16.0	12.1	15.1	10.7	7.5	8.1	6.3
Durable goods		5,812	3,587	5,133	33,674	11,583	32,234	45,723	55,897	66,112
%		8.8	6.5	7.3	15.5	8.0	12.9	7.8	11.8	8.0
Tax & insurance		1,640	917	1,018	6,877	3,128	4,738	20,864	14,225	23,081
%		2.5	1.7	1.5	3.2	2.2	1.9	3.6	3.0	2.8
Social activity		3,534	2,369	2,413	10,367	6,499	10,303	24,357	19,902	34,592
%		5.3	4.3	3.5	4.8	4.5	4.1	4.1	4.2	4.2
<i>Total non-food</i>		66,209	55,200	69,872	217,000	144,113	248,913	587,640	474,256	825,470
%		100	100	100	100	100	100	100	100	100

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source : The SUSENAS (1996; 1999; 2002).

Appendix 9

Average household expenditure on non-food items per month by the household types in Indonesia during 1996-2002 (*contd.*).

<i>Wealthy types</i>	‘Somewhat wealthy’ (T4)			‘Modestly wealthy’ (T5)			‘Very wealthy’ (T6)			
	year	1996	1999	2002	1996	1999	2002	1996	1999	2002
	<i>n</i>	333	270	158	46	22	16	38	12	16
		<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>	<i>mean</i>
<i>Non-food expenditure</i>										
Housing		872,595	718,512	1,338,300	265,323	3,676,057	5,450,300	3,081,540	36,873,686	16,085,154
%		52.3	62.7	54.1	8.2	78.7	78.4	73.6	90.0	84.3
Goods & services		371,179	213,453	558,128	146,273	611,804	713,752	562,189	2,235,629	690,920
%		22.3	18.6	22.5	4.5	13.1	10.3	13.4	5.5	3.6
Education		84,939	54,349	119,126	47,124	39,815	45,183	138,772	231,757	599,754
%		5.1	4.7	4.8	1.5	0.9	0.7	3.3	0.6	3.1
Health		40,338	21,540	61,239	20,795	44,659	62,861	22,390	220,311	31,366
%		2.4	1.9	2.5	0.6	1.0	0.9	0.5	0.5	0.2
Clothing		99,241	57,964	137,036	66,954	93,134	130,395	69,255	396,789	88,815
%		6.0	5.1	5.5	2.1	2.0	1.9	1.7	1.0	0.5
Durable goods		77,421	26,518	131,071	2,631,060	7,918	70,795	72,301	652,246	36,897
%		4.6	2.3	5.3	81.0	0.2	1.0	1.7	1.6	0.2
Tax & insurance		74,301	36,998	91,659	37,609	164,227	430,618	200,354	270,493	187,772
%		4.5	3.2	3.7	1.2	3.5	6.2	4.8	0.7	1.0
Social activity		47,279	17,518	39,202	32,232	33,287	46,182	41,338	102,819	1,354,536
%		2.8	1.5	1.6	1.0	0.7	0.7	1.0	0.3	7.1
<i>Total non-food</i>		1,667,293	1,146,852	2,475,761	3,247,371	4,670,901	6,950,086	4,188,138	40,983,731	19,075,214
%		100	100	100	100	100	100	100	100	100

Note : * calculated in rupiah (NZ\$ 1= 6,251 rupiah, US\$ 1= 9,200 rupiah; 1 February 2006).

Source : The SUSENAS (1996; 1999; 2002).

Appendix 10

Socio-demographic characteristics of the household types in Indonesia during 1996-2002.

<i>Poor types</i>	<i>year</i> <i>n</i>	'Very poor' (T1)			'Modestly poor' (T2)			'Somewhat poor' (T3)		
		1996	1999	2002	1996	1999	2002	1996	1999	2002
		40,971	39,322	48,741	12,681	15,447	13,589	2,549	2,912	1,902
Size of hs. (people)		4.02	3.74	3.80	5.18	4.90	4.61	5.47	5.22	5.02
Age of hs. head (year)		44.97	45.49	44.94	43.84	44.27	44.24	47.24	47.67	48.06
		<i>(%)</i>			<i>(%)</i>			<i>(%)</i>		
Gender of hs. head										
<i>Male of hs. head</i>		86	84	86	94	93	92	91	90	90
<i>Female of hs. head</i>		14	16	14	6	7	8	9	10	10
Marital status of hs. head										
<i>Married of hs. head</i>		84	80	83	92	89	89	91	87	87
<i>Single of hs. head</i>		16	20	17	8	11	11	9	13	13
Education of hs. head										
<i>Primary level</i>		58	57	70	38	40	46	17	16	20
<i>Intermediate level</i>		21	24	14	47	45	36	53	53	35
<i>Advanced level</i>		2	3	3	10	10	16	28	29	44
Occupation of hs. head										
<i>Farming</i>		49	59	60	15	30	26	3	21	26
<i>Trade</i>		11	12	6	19	20	11	23	26	9
<i>Services</i>		11	9	3	28	23	6	32	28	4
<i>Industry</i>		19	19	31	28	27	56	26	25	60
Areas of living										
<i>Urban</i>		28	30	33	66	61	81	92	92	99
<i>Rural</i>		72	70	67	34	39	19	8	8	1

Source : The SUSENAS (1996; 1999; 2002).

Appendix 10

Socio-demographic characteristics of the household types in Indonesia during 1996-2002 (*contd.*).

<i>Wealthy types</i>	year <i>n</i>	'Somewhat wealthy' (T4)			'Modestly wealthy' (T5)			'Very wealthy' (T6)		
		1996	1999	2002	1996	1999	2002	1996	1999	2002
		333	270	158	12,681	15,447	13,589	2,549	2,912	1,902
Size of hs. (people)		5.68	5.19	5.17	5.18	4.90	4.61	5.47	5.22	5.02
Age of hs. head (year)		47.40	52.07	51.35	43.84	44.27	44.24	47.24	47.67	48.06
		(%)			(%)			(%)		
Gender of hs. head										
<i>Male of hs. head</i>		93	84	87	98	86	88	95	83	100
<i>Female of hs. head</i>		7	16	13	2	14	12	5	17	0
Marital status of hs. head										
<i>Married of hs. head</i>		94	80	85	96	82	75	92	92	88
<i>Single of hs. head</i>		6	20	15	4	18	25	8	8	12
Education of hs. head										
<i>Primary level</i>		5	8	13	11	0	6	8	0	13
<i>Intermediate level</i>		40	47	25	52	36	19	18	8	6
<i>Advanced level</i>		55	44	63	37	64	75	74	92	75
Occupation of hs. head										
<i>Farming</i>		2	24	27	4	36	50	0	42	44
<i>Trade</i>		28	27	11	24	18	6	24	17	13
<i>Services</i>		29	20	5	39	36	6	24	8	13
<i>Industry</i>		28	28	55	28	9	38	45	33	31
Areas of living										
<i>Urban</i>		98	97	100	70	100	100	100	100	94
<i>Rural</i>		2	3	0	30	0	0	0	0	6

Source : The SUSENAS (1996; 1999; 2002).